

# FineScale MODELER<sup>®</sup>

MARCH/APRIL 1985 / \$2.50

An M4A3E2 "Jumbo" Sherman conversion in 1/35 scale

Charles Lindbergh's Lockheed Sirius

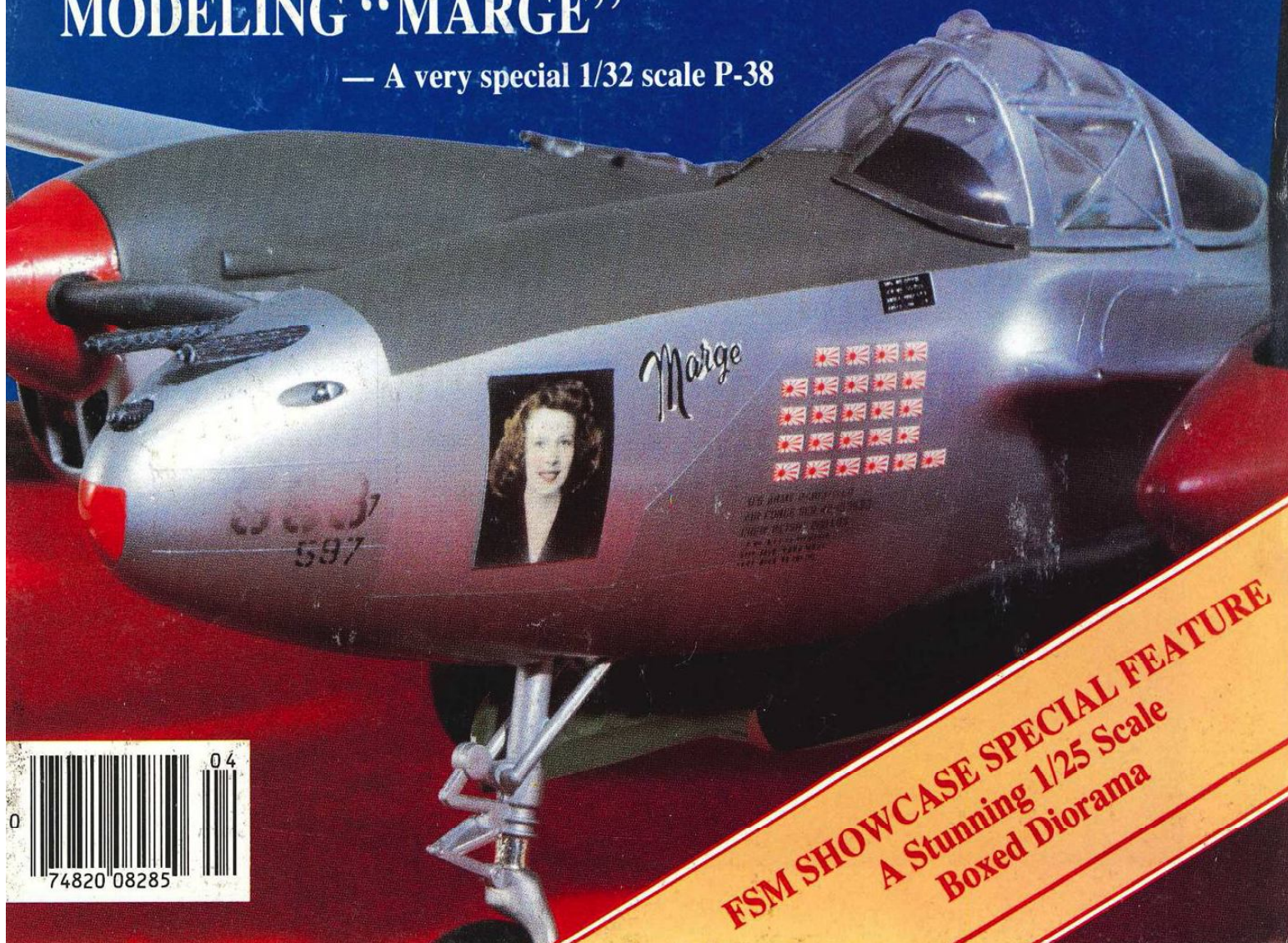
Stretch forming and vacuum forming plastic with homemade equipment



**STEP BY STEP:**  
How to paint faces  
in artist's oils

## MODELING "MARGE"

— A very special 1/32 scale P-38



**FSM SHOWCASE SPECIAL FEATURE**  
A Stunning 1/25 Scale  
Boxed Diorama



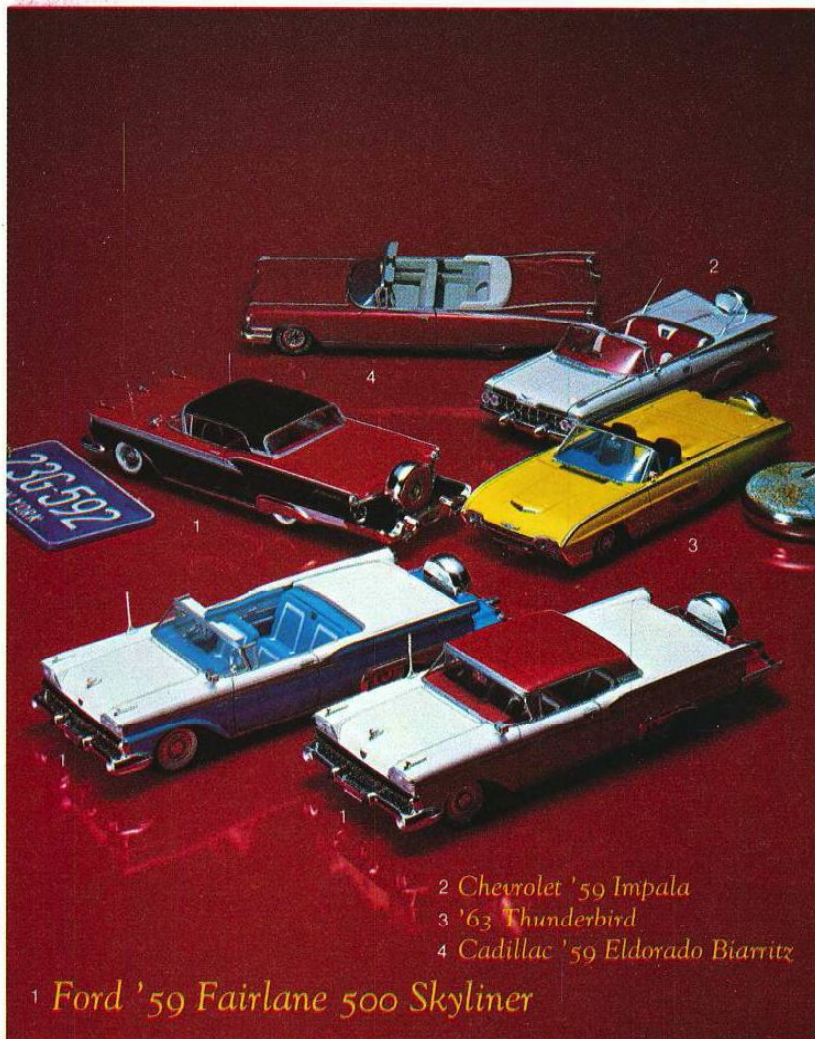


THE  
'50s-'60s  
COLLECTION

# *Ford '59 Fairlane 500 Skyliner*



GUNZE  
SANGYO



- 2 Chevrolet '59 Impala
- 3 '63 Thunderbird
- 4 Cadillac '59 Eldorado Biarritz

1 Ford '59 Fairlane 500 Skyliner

The '59 Ford Fairlane 500 Skyliner is the latest in GUNZE's 50's-60's series of 1/32 scale cars. You'll want to add this highly detailed kit to your collection today. If you are one of those modelers who appreciates craftsmanship, you're going to enjoy this fine model.

Lots of chrome and optional parts will allow you to build this model in a variety of ways. If you want the top up or down, Continental kit installed or not, this model brings you the feel of this great classic.

Ask for this exciting model kit at your favorite hobby shop and while you're there, ask to see the other 50's-60's series models pictured that are made by GUNZE SANGYO. You'll be glad you did.

Imported and distributed by:

EMPIRE PACIFIC LTD.  
10805 E. Artesia Blvd.  
Cerritos, CA 90701

SENTAI DISTRIBUTORS INTL.  
8839 Shirley  
Northridge, CA 91324



## EDITORIAL

Editor: BOB HAYDEN  
Associate Editor: BURR ANGLE  
Associate Editor: PAUL D. BOYER  
Editorial Assistant: MARCIA STERN  
Editorial Secretary: MONICA BOROWICKI  
Librarian: GEORGE H. DRURY

## ART

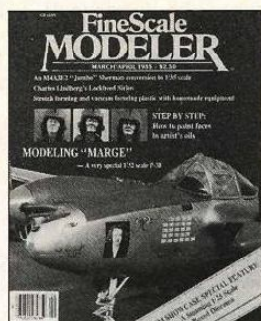
Art Director: LAWRENCE O. LUSER  
Staff Artist: WELLS S. MARSHALL, III  
Staff Photographer: A. L. SCHMIDT  
Staff Photographer: PAUL A. ERLER

## EXECUTIVE

President and Publisher: JAMES J. KING  
Editorial Vice President: DAVID P. MORGAN  
Executive Art Director: GEORGE A. GLOFF

## SALES

Ad Sales Manager: FREDERICK J. HAMILTON  
Commercial Sales Manager: THOMAS J. D'AMICO  
Creative Director: GARY W. DOLZALL  
Advertising Production Manager: ART CURREN  
Advertising Production Assistant: SARA BENZ



## ON THE COVER

Faces — on figures and fighters — dominate our cover this time. Painting the human face is far from easy — whether it's on canvas or a miniature figure — but George DeWolfe tackles the job in step-by-step fashion in his article that begins on page 22. World War Two ace Richard Bong named his P-38 "Marge," and proudly displayed his sweetheart's face on the nose of the plane; FSM Associate Editor Paul Boyer explains the special techniques he used to model this very special portrait beginning on page 60. Photos by George DeWolfe and FSM Staff Photographer Paul A. Erler.



FINESCALE MODELER (ISSN 0277-979X) is published bi-monthly (six times a year) by Kalmbach Publishing Co., 1027 N. Seventh Street, Milwaukee, WI 53233, (414) 272-2060. SUBSCRIPTION RATES: 6 issues, \$12.50; 12 issues, \$23. With foreign postage (outside the United States) 6 issues, \$15.50; 12 issues, \$29 (payable in U. S. funds only). © 1985, Kalmbach Publishing Co. Title registered as trademark. Second-class postage paid at Milwaukee, WI, and at additional offices. Printed in U.S.A. All rights reserved. This publication may not be reproduced in part or in whole without written permission from the publisher, except in the case of brief quotations used in reviews. POSTMASTER: Send address changes to FINESCALE MODELER, Kalmbach Publishing Co., 1027 N. Seventh St., Milwaukee, WI 53233. Canadian second-class postal permit 9589. Send Canadian address changes to Bowering Custom Brokers, P. O. Box 1173, Fort Erie, Ontario L2A 5N9.

FINESCALE MODELER assumes that such material as letters, club news, news releases, new-product information, etc., is contributed gratis. Feature articles and scale drawings are paid for on acceptance. Photographs accepted separately are paid for upon publication. Leaflets outlining in detail the preparation of features, photographs, and drawings are available on request from the Editorial Secretary. Unsolicited material, if not accepted, will be returned only if postage and wrappings are provided for this purpose. FINESCALE MODELER assumes no responsibility for the safe return of unsolicited material.

# FineScale MODELER

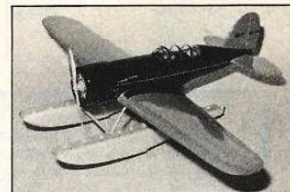
VOL. 3 NO. 2 MARCH/APRIL 1985



Page 32



Page 40



Page 48

## 22 Painting faces in artist's oils

Step-by-step techniques you can apply to any figure in any scale  
GEORGE DEWOLFE

## 28 Easy underwing details

Getting to the bottom of aircraft models  
RICHARD WEHR

## 32 Stretch forming and vacuum forming in plastic

Making new parts is easy with these simple, homemade tools  
PAT PERCIVAL

## 40 Modeling the Jumbo assault Sherman M4A3E2

A 1/35 scale conversion to an unusual variant  
DAVE MUSIKOFF

## 48 Modeling Lindbergh's Lockheed

A "Sirius" conversion of AMT's 1/48 scale Vega  
WAYNE E. MOYER

## 56 FSM SHOWCASE SPECIAL FEATURE: The high altar of the Benedictine Abbey, Weltenburg, Germany

Ray Anderson's stunning 1/25 scale diorama

## 60 Modeling "Marge"

A 1/32 scale P-38 presentation model with very special markings  
PAUL BOYER

## 68 5th New York Volunteer Infantry Regiment (Duryée's Zouaves), Union Army, Civil War, 1861

Number 5 in the AMERICAN DRESS AND DETAIL series R. J. STAFFORD

## DEPARTMENTS

### 4 Update

### 12 Workbench Reviews

### 18 FSM Looks at New Products

### 21 From the Editor

### 38 FSM Clinic

### 64 Book Briefs

### 67 Video Briefs

### 71 Tips and Techniques



### 78 Index to Advertisers



**30MM Tradition** & "WILLIE" EDWARD SUREN  
SCANDINAVIA

Figures for the serious collector, dioramist & artist  
CATALOG \$1.00 - refundable  
● DEALER INQUIRIES INVITED ●

THE MODEL SHOPPE  
323 1/2 RICHMOND ST.  
EL SEGUNDO, CA 90245

"HIGH QUALITY"  
**AVIATION PRINTS**

Send \$1.00 for catalog listing of photographs with brief description.  
\*Refundable with first order.\*

SIZES AVAILABLE  
5x7 \$5.95  
7x10 \$7.50  
10x14 \$9.50

mail to: SHERRILL STUDIO  
P.O. Box 2264  
Riverview, MI 48192

**DIORAMA MATERIALS**

DUSTING KITS - Weathering/aging structures & models with 5 shades of dust. KIT A - white, gray, brown, black, red. KIT B - d. gray, cream, off white, med. brown, flesh. \$9.35


ROCK - SOIL - GRANITE - 117 different colors & grades - Sample Kit \$9.35, Send SASE

THE ROCK QUARRY, 3705 KNIGHT LN, GARLAND, TX 75042

**FIGURE CASTING METALS!**  
Lead • Tin • Antimony • Bismuth • Many Alloys, Including Lead, Tin, Pewter and Fusible. Also fluxes and ladles. We are a refinery with low prices. Free expert advice. Send \$2.00 for our catalog today.  
Art Green, 485 S. Robertson Blvd.  
Beverly Hills, CA 90211. (213) 274-1283

**VULTEE P-66**  
FULL COLOR  
1/24 CARD  
MODEL KIT  
Catalog .25¢  
\$5.50ppd

**META MODEL**  
P.O. BOX 221  
BATAVIA, NY 14020



"I now have 20/20 sharpness" - says Pedro Pinhole

**FRICKO PINHOLE LENS with COLENS**  
● Contains our new colens which provides:  
● a TREMENDOUS DEPTH OF FIELD.  
● in FOCUS FROM 3" to INFINITY.

● For miniature photos, gives perspective of a scale man. photos can be taken looking up at models, perfect focus of foreground and background, no vertical line distortion, makes models look real.

● Works on manual exposure or on automatic aperture preferred cameras. Can use any 35mm film, can shoot indoors or outdoors, with or without flash.

● Available for 35mm SLR cameras: CANON, KONICA, MINOLTA, NIKON, OLYMPUS, PENTAX K, PENTAX S, YASHICA, CONTAX, MAMIYA.

● \$39.95 each. Send SASE for information.  
Order direct or your dealer can get it from Walthers.  
A. J. Fricko Co.  
P.O. Box 43276, Cincinnati, OH 45243-0276

**BIG DISCOUNTS**  
AIRCRAFT. ARMOR. SHIPS. PAINTS. BOOKS

★ **BATTLE HOBBIES** ★  
P.O. BOX 184  
ST. PAUL PARK, MN 55071

CATALOG & UPDATES - \$1.00

All Regular Lines Plus:

- KOKU-FAN
- WAFFEN ARSENAL
- KOOKABURRA
- MARU MECHANIC
- SUPERMODEL
- NOVO & SMER
- OGONEK

★ VISA & MC ACCEPTED ★

## FSM UPDATE

FSM invites manufacturers and publishers to submit news releases, photos, product samples, and new catalogs. A description of our new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

**FSM index.** The FSM index is included in subscribers' copies of this issue. The first 12 issues of FSM are indexed - Spring 1982 through November/December 1984. Non-subscribers can obtain a copy of the index by sending a large, stamped, self-addressed envelope to FSM Index, 1027 North Seventh Street, Milwaukee, WI 53233. Copies are available on a first-come basis while supplies last.

**Kit releases.** Bluejacket Shipcrafters, 93 Canal Street, Shelton, CT 06484, has introduced the *Jefferson Davis*, a plank-on-frame kit of an 1853 Baltimore Clipper-type revenue cutter in 7/8" = 1' scale. The kit, No. 1051, comes with a hardwood frame set, preshaped bow and stern pieces, brass fittings, britannia pewter fittings, 96-page instruction book with 75 step-by-step construction photos, complete plans, and all wood parts needed. It sells for \$295.00.

Heller, 24, rue de Paradis, 75010 Paris, France, has added six new kits to its line: No. 302, 1/72 Lockheed F-94B Starfire; 316, 1/72 Douglas DC-6B Securite Civile; 361, 1/72 AMD Etendard IV M; 3503, 1/24 Renault G260 Turbo Bobcat; 80745, 1/24 Alpine Renault 1600; and 80750, 1/24 Porsche 908. Numbers 80745 and 80750 are part of Heller's Historic Racing Cars series.

Heritage Shipbuilders, Box 494, Lathrup Village, MI 48076, has announced the release of an 1891 whaleback steamer kit, the *Washburn*. The scale is 1/16" = 1'. It is 25" long, 3" wide, and 1 1/2" deep. Send a stamped, self-addressed envelope for more information.

The latest release from Huma-Modell, Kilianstädter Strasse 9, 6450 Hanau 6, West Germany, is a 1/72 Fw 44 "Stieglitz." It sells for DM (deutsche marks) 17.00 (approximately \$5.50 U.S.), including airmail postage.

Mikansue, 3 Bell Lane, Eton Wick, Windsor, Berks. SL4 6JP, England, manufactures and distributes 1/43 white metal automobile kits. A product list is available.

Model Rectifier Corporation, 2500 Woodbridge Avenue, P.O. Box 267, Edison, NJ 08817, has added two Tamiya 1/12 motorcycle kits to its line: No. 1435, Honda CBR 400F, and 1436, BMW K100. Also new are a New Man Porsche 956 kit, No. 2449, and a Honda City Cabriolet kit, 2450, both from the 1/24 sports car series.

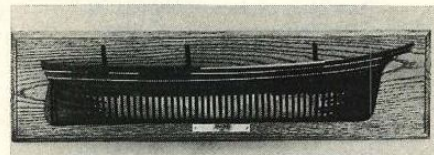
**BEGINNERS TOOL KIT**  
Our most popular whittler's and carver's combi tool kit. ● Features 4 1/8" walnut handle with Warren solid brass 3-way jaw. One each honed sharp LBG, PTV-1 gouges, heavy duty blade LD2, 8B, 10B, 11B, 20EX, 21EX & 22B small blades. All packaged in clear plastic box only \$28.25 Postpaid. This handle holds all components listed.  
Catalog only 60¢. FREE catalog with order.

**WARREN TOOL CO., INC.**  
Rt. 1, Box 14A, FS Rhinebeck, NY 12572



Available from Monogram Models, Inc., 8601 Waukegan Road, Morton Grove, IL 60053-2295, are three new 1/24 automobile kits: No. 2209, 1985 Corvette; 2242, 1985 Pontiac Fiero GT; and 2243, 1985 Mustang SVO turbo.

Northeastern Scale Models, Inc., 99 Cross Street, P.O. Box 425, Methuen, MA 01844, has introduced a half-hull plaque kit of the



1857 American medium clipper ship *Black Hawk*. The kit was designed by William Hitchcock and is the first release in Northeastern's Sea Classics series. The kit features exposed ribs, step-by-step plans, full-size diagram, basswood and mahogany hardwoods, and a 22" x 5 3/4" plaque.

RAREplanes, 69 Redstone Hill, Redhill, Surrey, England, has announced the release of three new 1/72 vacuum-formed aircraft kits: Beech UC-12B Super King Air 200,



Gates C-21A Learjet (Model 35), and Grumman XF5F-1 Skyrocket. RAREplanes' U.S. distributor is Brookhurst Hobbies, 12741 Brookhurst Way, Garden Grove, CA 92640.

**Decals.** Americal/Gryphon Decals, 4373 Varsity Lane, Houston, TX 77004, has released three new 1/72 decal sheets. A revised decal of Kriegsmarine Camouflage 1917-1918 is the subject of sheet No. 1; sheet 10 includes World War One Italian roundels; and sheet 12 is of WWI German crosses, varying in size from 5 mm to 47 mm. Each sheet costs \$5.00; add 88 cents for postage for up to three decal sheets and 17 cents for each additional three sheets. A catalog is available for 40 cents or two International Reply Coupons.

The latest 1/72 Microscale decals from Krasel Industries, Inc., 919 Sunset Drive, Costa Mesa, CA 92627, include sheet No. 72-456 with markings for "Peach 91," the last F-105 retired from service, "My Karma," an F-105D from Hill AFB, and an F-15A from the 318 Fighter Interceptor Squadron.

**VP CANADA** 1/72 vacuforms TOP QUALITY !!

13 MIG I-270(Z) 1946 Soviet rocket fighter (NEW)	\$5.95
2 Beresnyak-Isaev BI WWII Soviet rocket fighter	\$3.95
3 Blohm & Voss BV-40 WWII German glider fighter	\$3.95
8 Beriev Be-2 (KOR-1) 1937 Russian seaplane	\$6.95
10 Polikarpov R-5 1928 Russian bomber biplane	\$6.95
11 Aero A300 late '30s Czech twin engine bomber	\$8.95
12 Avro Canada Arrow CF-105 '58 Mach 2 delta wing	\$12.95
<b>Mikro Injection Molded 1/72</b>	
PZL P 37 A/B LOS bomber (2 versions)	\$11.95
YaK1/IM (2 versions)	\$4.45
LWS Czapla (Polish reconnaissance parasol)	\$4.45

Send for newsletter. DEALER ENQUIRIES INVITED.  
Payment in US \$. POSTFREE. VICTORIA PRODUCTS, DEPT FS  
930 Foul Bay Road, Victoria, B.C., Canada V8S 4H8



# Increase your modeling enjoyment – and skills! Subscribe!

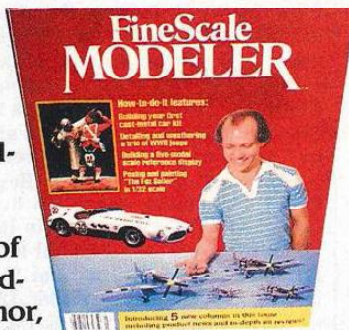
**Y**ou can enjoy all the challenges of scale modeling, all the satisfaction of creating realistic, superb models – and you can increase your model-building skills – with FINESCALE MODELER as your guide

In FSM, you'll discover scores of new modeling projects – for building miniature ships, aircraft, armor, autos and trucks, figures, and dioramas – that will challenge you to improve your modeling skills.

You'll learn the modeling techniques used by North America's finest modelbuilders. You'll discover the research data – the razor-sharp scale plans, full-color renderings, and crisp photos – you need to create historically accurate, award-winning models.

And you'll find the product news and reviews you need to keep up-to-date on the hobby.

Make your scale modeling exciting, invigorating, rewarding – make your scale modeling better than it's ever been before! Subscribe today and FINESCALE MODELER will arrive right at your doorstep year-round!



FINESCALE MODELER  
1027 N. Seventh St.  
Milwaukee, WI 53233  
Model by Dennis Moore.  
© 1984 Kalmbach Publishing Co.



# AVIATION VIDEO CASSETTES!

Official Combat Footage!

## AIR WAR!

Low Priced,  
High Quality

Military History  
on Home Video Cassettes. VHS or BETA. We pay  
U.S. Postage. Most Orders Shipped Within 3  
Working Days. Reliability! Our 20th Year!

### "U.S. Air Force in Vietnam" COLOR

The Air Force played a crucial role in the struggle in Vietnam.  
All the latest USAF aircraft.

### "Screaming Eagles in Vietnam" COLOR

The men of the 101st Airborne Division, the famous "Screaming  
Eagles" in action in Vietnam.

NF 116 (2 Complete Programs, 58 min.)... Only \$3900

### "This Is Korea" COLOR

Rediscovered classic of U.S. struggle for Korea. Early war-  
birds. A John Ford epic!

### "History Of The Korean War" COLOR

P-51s fly 24-hour air strikes. B-29s and Sabre Jets. T-Bone, Bloody  
Ridge, Heartbreak Ridge.

NF 126 (2 Complete Programs, 1 hr. 50 min.)... Only \$4995

### "Hook Down, Wheels Down" COLOR

The history and heroism of our great carriers from USS  
Langley to USS JFK. Kamikaze action!

### "Story Of Naval Aviation" COLOR

Navy in the air from its earliest days—the first transatlantic  
flight—to its modern role as a primary strike force.

### "December 7th" COLOR

John Ford's Academy Award winning documentary of the  
devastating attack on Pearl Harbor. This video is a warbird feast!

NF 128 (4 Complete Programs, 2 full hours) Only \$4995

## SAVE EVEN MORE...

All 3 Video Tapes Only \$129.95!

## ORDER ANYTIME!

1-800-528-6050 Ext. 1440

All Major Credit Cards!

NF VIDEO, Inc., 177 Webster St., Suite 244  
Monterey, CA 93940

## RIVERSIDE HOBBIES

PLASTIC MODEL KITS

FROM AROUND THE WORLD

AIRCRAFT MONSTERS SHIPS  
ARMOR MOTORCYCLES SPACESHIPS  
CARS ROBOTS TRUCKS

THREE MAIL ORDER CATALOGS AVAILABLE

\$1.00 FOR CAR & TRUCK CATALOG

\$1.50 FOR ILLUSTRATED SCI-FI CATALOG

\$2.00 FOR COMPLETE CATALOG

INQUIRIES INCLUDE SASE FOR REPLY

SEND TO OUR NEW ADDRESS

5770 FREEPORT BLVD., SUITE 16

SACRAMENTO, CA 95822 (916) 392-9739

Sheet 72-457 includes markings for F-18 Hornets from VFA-25, VFA-113, VMFA-531, and the Royal Canadian Armed Forces. A C-47 of the U. S. Army "Golden Knights" parachute team, a C-47 of the Air Rescue Service, and a C-49K (ex-DC-3) are featured on sheet 72-458. Argentine Skyhawks, Super Etendards, and Daggers are the subjects on sheet 72-459.

In 1/48, Microscale offers sheet No. 48-231 with markings for F-16As from the 50 Tactical Fighter Wing (TFW) and the 388 TFW. Sheet 48-232 has markings for an F-16A and F-16B from the 58 Tactical Training Wing (TTW) and from the Operational Test and Evaluation Squadron. A Presidential Flight VH-53D helicopter and a CH-53D from the Israeli Defense Force are featured on sheet 48-233. A-6A Intruders from VA-95 and VA-115 are the subjects of sheet 48-234.

New from PM Plastic Model, P.K. 133, Bakirköy, Istanbul, Turkey, is a decal set containing markings for 1/48 and 1/72 old and new Turkish Air Force aircraft.

Woodland Scenics, P. O. Box 98, Linn Creek, MO 65052, has added five full-color sets of dry-transfer decals to its line: No. DT 501, Tuscan and Playbill letters, \$2.98; DT 503, Gothic Outline and Sign Painter letters and numbers, \$2.98; DT 552, assorted business signs, \$4.98; DT 553, depot, Railway Express Agency, and advertising signs, \$4.98; and DT 557, data/warning labels and commercial signs, \$4.98.

Paints and adhesives. Bond Adhesives Company, 301 Frelinghuysen Avenue, Newark, NJ 07114, has introduced 484 Tacky cement. It comes in a refillable .80-ounce syringe dispenser with a tapered nozzle and a 4-ounce, wide-mouth jar.

Figures. Available from Drumbeat, Birmingham House, St. Mary's Street, Painswick, Glos. GL6 6QA, England, are 54 mm traditional-style white metal toy soldiers.

Holt's Hobbies, 19800 Southwest 180th Avenue, Box 40, Miami, FL 33187, offers original hollow-cast, dimostore size (70 mm) lead soldiers—WWI American and German—and accessories. All helmets on the figures are cast, and the figures are compatible with Barclay's and Manoil's figures of the 1930s and 1940s. Prices range from \$4.00 to \$10.00.

Mil-Art, 41 Birch Drive, Brantham, Nr. Manningtree, Essex CO11 1TG, England, has released an 80 mm trooper of the U. S. 1st Air Cavalry, Vietnam. It is item No. F27

# VERLINDEN

Special Offer - 10% Discount\*

## FULL-COLOR MODELING MANUALS

- #1 The Verlinden Way Vol 1: Diorama Building \$9.95
- #2 The Verlinden Way Vol 2: AFV Modeling \$9.95
- #3 The Verlinden Way Vol 3: On Plastic Wings \$9.95
- #4 On Target No 1: The German Tiger Tanks \$8.95
- #5 Lock On No 1: C/N F-104 G/J Starfighter \$10.95
- #6 Lock On No 2: G.D. F-16 Fighting Falcon \$10.95
- #7 Lock On No 3: C-130 Hercules (Spring '85) \$10.95

WW/2 FULL-COLOR PRINTED ACCESSORIES: 1/35 SCALE

- #8 Newspapers, Posters, Portraits, Instruction Sheets \$2.95
- #9 Staff, Road and Aviation Maps, plus Manuals etc \$2.95

WW/2 PRINTED CUT-AND-FOLD BOXES: 1/35 SCALE

- #10 US Army Field C-Rations Cartons (13 pieces) \$2.95
- #11 Military Cardboard Boxes (various types) \$2.95

WW/2 FULL-COLOR PRINTED ACCESSORIES: 1/35 SCALE

- #12 German Military/French Civilian Signs/Normandy \$3.50
- #13 Allied Road Signs/Normandy to Berlin (36) \$3.50
- #14 German Road Signs/Russia (54 different signs) \$3.50
- #15 German & Allied Road Signs/North Africa (29) \$3.50

MISCELLANEOUS ACCESSORIES: 1/35 SCALE

- #16 Camouflage Netting (in green, brown & tan) \$2.95

MODERN PRINTED CUT-AND-FOLD BOXES: 1/20 & 1/24

- #17 Modelkit Packing Boxes for Truck-Loads (6) \$2.95
- #18 Petroleum Products Packing Boxes (6 pieces) \$2.95

VERLINDEN FULL-COLOR CATALOG/HANDBOOK

- #19 Covers Kits, Printed Accessories, Dry Decals, Books, Painting and Finishing Tips / 24 pages, 8" x 11" \$3.50

DRY DECALS FOR LARGE AFV MODELS: 1/35 SCALE

- #20 WW/2 US Army Vehicle Markings (white) \$5.95
- #21 Israeli Military Vehicle Markings No 1 (b & w) \$6.50
- #22 Israeli Military Vehicle Markings No 2 (b & w) \$6.50
- #23 WW/2 German Army Vehicle Markings No 1 \$6.95

NEW FULL-COLOR PRINTED ACCESSORIES: 1/35 SCALE

- #24 WW/2 German Propaganda Posters (contains 20) \$3.50
- #25 WW/2 Allied Propaganda Posters (contains 20) \$3.50

OUTSTANDING NEW VERLINDEN ACCESSORIES

- #26 Barbed Wire: 1/35 (photo-etched, 132" long) \$4.50
- #27 Detailed F-16 Cockpit Instruments: 1/12 scale \$4.50

FORTHCOMING MODELING MANUAL IN SERIES

- #28 The Verlinden Way Vol 4 (pub Mar/Apr '85) \$10.95

NEW, UNUSUAL VERLINDEN ACCESSORIES: 1/35 SCALE

- #29 Modern Field Rations: US MRE Cartons \$2.95
- #30 Bannisters, Ornaments (detailed, photo-etched) \$4.50
- #31 Wrought-Iron Gates: with hinges (photo-etched) \$4.50
- #32 Cut-Glass Decorated Windows (in polyester) \$5.95

NEW FULL-COLOR PRINTED ACCESSORIES: 1/35 SCALE

- #33 WW/2 French Commercial Signs (contains 27) \$3.50
- #34 WW/2 German Commercial Signs (contains 31) \$3.50

NEW DRY DECALS FOR AFV MODELS: 1/35 SCALE

- #35 WW/2 US Army Stars, Letters, Numbers (white) \$5.95
- #36 Modern US Army Stencilling No 1 (white) \$4.50
- #37 Modern US Army Stencilling No 2 (black) \$4.50
- #38 Modern US Army Code Numbers & Stars (black) \$4.50

AT LAST! NEW DRY DECALS FOR AIRCRAFT MODELS

- #39 A/C Stencilling No 1: 1/32 & 1/48 (white) \$4.50
- #40 A/C Stencilling No 2: 1/72 scale (white) \$4.50

"THE TANKERS": NEW 54mm WHITE METAL FIGURES

- #41 US Tank Commander 1980s (includes base) \$9.95
- #42 Israeli Tank Commander 1970s (includes base) \$9.95
- #43 US Tank Crew 1980s (three "half-figures") \$10.95
- #44 Israeli Tank Crew 1970s (three "half-figures") \$10.95
- #45 Six different "Heads" (for conversion projects) \$4.50

MDA RANGE CASTINGS (10 in series) / SEND FOR LIST

Check items required below / 10% DISCOUNT prices listed:

- |                                     |                                     |                                     |                                     |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> #1 \$8.95  | <input type="checkbox"/> #2 \$8.95  | <input type="checkbox"/> #3 \$8.95  | <input type="checkbox"/> #4 \$8.05  |
| <input type="checkbox"/> #5 \$9.85  | <input type="checkbox"/> #6 \$9.85  | <input type="checkbox"/> #7 \$9.85  | <input type="checkbox"/> #8 \$2.65  |
| <input type="checkbox"/> #9 \$2.65  | <input type="checkbox"/> #10 \$2.65 | <input type="checkbox"/> #11 \$2.65 | <input type="checkbox"/> #12 \$3.15 |
| <input type="checkbox"/> #13 \$3.15 | <input type="checkbox"/> #14 \$3.15 | <input type="checkbox"/> #15 \$3.15 | <input type="checkbox"/> #16 \$2.65 |
| <input type="checkbox"/> #17 \$2.65 | <input type="checkbox"/> #18 \$2.65 | <input type="checkbox"/> #19 \$3.15 | <input type="checkbox"/> #20 \$3.15 |
| <input type="checkbox"/> #21 \$5.65 | <input type="checkbox"/> #22 \$5.65 | <input type="checkbox"/> #23 \$6.25 | <input type="checkbox"/> #24 \$3.35 |
| <input type="checkbox"/> #25 \$3.15 | <input type="checkbox"/> #26 \$4.05 | <input type="checkbox"/> #27 \$4.05 | <input type="checkbox"/> #28 \$9.85 |
| <input type="checkbox"/> #29 \$2.65 | <input type="checkbox"/> #30 \$4.05 | <input type="checkbox"/> #31 \$4.05 | <input type="checkbox"/> #32 \$5.35 |
| <input type="checkbox"/> #33 \$3.15 | <input type="checkbox"/> #34 \$3.15 | <input type="checkbox"/> #35 \$5.35 | <input type="checkbox"/> #36 \$4.05 |
| <input type="checkbox"/> #37 \$4.05 | <input type="checkbox"/> #38 \$4.05 | <input type="checkbox"/> #39 \$4.05 | <input type="checkbox"/> #40 \$4.05 |
| <input type="checkbox"/> #41 \$8.95 | <input type="checkbox"/> #42 \$8.95 | <input type="checkbox"/> #43 \$9.85 | <input type="checkbox"/> #44 \$9.85 |

#45 \$4.05 / Fill in total number of items ordered

SPECIAL SBI 20% DISCOUNT ON SERIES BOOKS: With every Verlinden item you order, you may also purchase any of the following: ☐ Aeolus Aeroguide \$5.50 (\$4.40) ☐ After the Battle \$3.50 (\$2.80) ☐ Osprey Airwar \$7.95 (\$6.35) ☐ Monogram Close-Up \$6.95 (\$5.55) ☐ Aero Detail in Scale \$7.95 (\$6.35) ☐ Men-at-Arms \$7.95 (\$6.35) ☐ Squadron/Signal \$4.95 (\$3.95) ☐ Tanks Illustrated \$7.95 (\$6.35) ☐ Uniforms Illustrated \$7.95 (\$6.35) ☐ Osprey Vanguard \$7.95 (\$6.35) ☐ Arms & Armour Warbirds \$7.95 (\$6.35)

Send me the items checked, for which \$ \_\_\_\_\_ is enclosed. N.Y. City residents add 8-1/4% Sales Tax / Elsewhere in N.Y. State, add Local Sales Tax / Plus \$2 shipping and handling  
Name \_\_\_\_\_ Date \_\_\_\_\_ 1985  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

SKY BOOKS INTERNATIONAL (FSM) / 48 EAST 50th ST  
NEW YORK / NY 10022 / USA \* Phone 1-718-767-6632

Dealer enquiries to: BILL DEAN BOOKS LTD / 151-49 7th AVENUE / WHITESTONE / NY 11357 \* 1-718-767-6632 (BDB is the sole US distributor of Verlinden Publications)

\* these prices are valid when ordering from this FSM ad.

## IF YOU ARE MOVING...

... please  
let us know  
five weeks  
before you  
move and  
change your  
address.  
Thank you.

ATTACH MAGAZINE MAILING ENVELOPE LABEL HERE.  
OR, PRINT YOUR PRESENT ADDRESS IN THIS SPACE.

PRINT YOUR  
NEW  
ADDRESS  
HERE

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City, State, Zip \_\_\_\_\_

MAIL TO KALMBACH PUBLISHING CO., 1027 N. SEVENTH ST., MILWAUKEE, WI 53233



and is available in the U. S. from The Hobby Chest, 8808 Bronx, Skokie, IL 60077; The Military Shop, Lakewood Center Mall, Lakewood, CA 92020; and The Soldier Centre, P. O. Box 38, West Roxbury, MA 02132.

Quartermaster Corps, P. O. Box 908, Buckingham, PA 18912, has announced the release of three 1/32 figure sets of the 2nd Boer War, 1899, British 2nd Cameronians (90th Foot): set No. 14, infantry set, \$65.00; set 15, handler with two horses, \$40.00; and set 16, freight wagon with three infantrymen, \$105.00. Add \$2.00 per set for postage. Send a large, stamped, self-addressed envelope for a complete list.

Eleven packs of figures have been added to the "Paladins and Plate" series from Rafm Company Inc., 19 Concession Street, Cambridge, ON, Canada N1R 2G6. Also new are 4 packs of figures in the "Hussites" series and 12 packs of figures and a set of accessories in the "Flint and Feather" series. All figures are 25 mm.

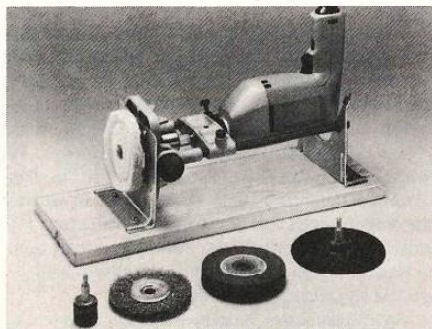
Sovereign Military Miniatures, Ltd., 5711 California Avenue, Altoona, PA 16602, has introduced three new sets of 54 mm (1/32) hand-painted metal figures. Set No. SRB-1 includes ten figures of the Scots Guard Regimental Band, \$110.00; GHB-1 includes ten figures of the Gordon Highlanders (pipes and drums), \$110.00; and GHB-2 includes one officer and four privates of the Gordon Highlanders, \$50.00. Add \$2.50 per order for shipping.

**Accessories and diorama materials.** ATP, Inc., 3014 Abelia Court, San Jose, CA 95121, sells custom-made lead weights that fit Heller's 1/72 Constellation and DC-6. With the weight installed, each model will rest properly on its nose gear. Each weight is \$2.50 plus \$2.00 shipping. Also from ATP are injection-molded plastic CFM-56 engine nacelles to convert Revell's DC-8-61 to a DC-8-71.

Available from Drumbeat, Birmingham House, St. Mary's Street, Painswick, Glos. GL6 6QA, England, are display cases with either dust covers or sliding front cabinets.

The Rock Quarry, 3705 Knight Lane, Garland, TX 75042, offers tar papers in two sizes — HO (1/87) and O (1/48) scale — and four colors — red, black, green, and gray.

**Tools.** New from General Hardware Manufacturing Co., Inc., 80 White Street, New



York, NY 10013, is the Home Workshop Kit, product No. 39, \$29.98. This kit converts a hand-held electric power drill into a bench-mounted unit. It includes General Precision Drill Guide No. 36, together with brackets, hardware, and instructions. If you already own a General Precision Drill Guide,



## BEAUTIFUL decals for that finishing touch.

#72-1 F-106A, 191st FIG, MICHIGAN ANG.....	\$3.00	#48-1 F-4C, 191st FIG, MICHIGAN ANG.....	\$3.50
#72-2 U.S. National Insignia, WW II.....	\$2.00	#48-2 RF84F/K, 191TRG and 127TRG, Mich. ANG	\$3.50
#72-3 U.S. National Insignia, Present Day.....	\$2.00	#48-3 F4E, 57th FIS, Keflavik, Iceland.....	\$3.50
#72-4 F4E, 57th FIS, Keflavik, Iceland.....	\$3.00	#48-4 F15's 48th FIS, Langley AFB, Virginia and	
#72-5 F15's, 48th FIS, Langley AFB, Virginia and		555th TFFS, Luke AFB, Arizona.....	\$3.50
555th TFFS, Luke AFB, Arizona.....	\$3.00	#48-5 F-106A, 191st FIG, MICHIGAN ANG.....	\$3.75
#72-6 F106A, 101st FIS, Mass., ANG.....	\$3.50	#48-6 F-106A, 101st FIS, MASS ANG.....	\$3.75
#72-7 F106A, 177th FIG, New Jersey, ANG.....	\$3.50	#48-7 F-106A, 177th FIG, NEW JERSEY ANG.....	\$3.75

**NEW! #48-8 U.S. NAT. INSIG.** Contains 8 ea of the 7 types of 15" insignia presently used by the U.S. 4 x 6 sheet..... \$3.50

### POSTAGE AND HANDLING

Decals.....	.35¢
Bare-Metal 1st Sheet.....	.60¢
Polish (separate postage required) 1st Bottle.....	.60¢
Each Additional.....	.30¢
Each Additional.....	.30¢

### —DEALER INQUIRIES INVITED—

**BARE-METAL FOIL COMPANY**  
P.O. Box 82  
Farmington, Michigan 48024



**INTRODUCING**

# Zéga

**The First**

## COMPLETE WORK CENTER

**for the**

**Hobby Craftsman and**

**Serious Model Builder.**

**T**he new Zéga multi-purpose precision work center is for the serious model builder or hobby craftsman. With Zéga, you'll be able to cut, carve, grind, shape, drill, sand or polish even the smallest pieces — perfectly!

If you've ever tried to use a full-sized saw or power tool for your detailed model projects, you know what a poor job they do.

Now, thanks to the remarkable design and engineering skills of German craftsmen, Zéga changes all that!

You'll get a new degree of precision and versatility never before available in a model or hobby craft saw — all from the unique, multi-purpose Zéga Model Center.

Zéga provides more professional features, more precision applications and a more complete workshop capability than anything else on the market.

Best of all, Zéga's attachments add a remarkable degree of versatility. With the power take-off and flexible power shaft, you'll have as comprehensive and varied

a model work center as you need — simply by adding accessories!

### Try Zéga for 30 Days — At Our Expense!

Try the Zéga Model Center in your own home for a full month. If you don't agree that it is all we say it is (and much more!) simply return it and we'll promptly refund your money!

### SPECIAL INTRODUCTORY PRICE AND FREE BONUS (If You Hurry!)

#### Zéga model center

A Division of Mantis Manufacturing Co.  
1458 County Line Road, Dept. Z113  
Huntingdon Valley, PA 19006

☐ Rush me FREE information on the remarkable Zéga Model Center PLUS special prices and FREE bonus!

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

©MMC 1985



## MODEL FLOATPLANE OFFER

Imported by  
**FROM Canadian Mist.**

Order an authentic, 1/24 scale miniature replica DeHavilland Beaver floatplane. The bright yellow model with 24" wing span comes in 26 snap-together pieces for easy assembly.

Send \$14.95 via check or money order to:  
Canadian Floatplane Offer, Box 5300  
1975 Wisconsin Avenue, Grafton, Wisconsin 53024

Residents of Alaska and Canada must add \$2.00 for shipping and handling.  
Please allow six to eight weeks for delivery. Offer valid where legal. Satisfaction guaranteed or money back.

# DES PLAINES HOBBIES

PROBABLY THE BEST LITTLE  
MODEL SHOP IN CHICAGOLAND

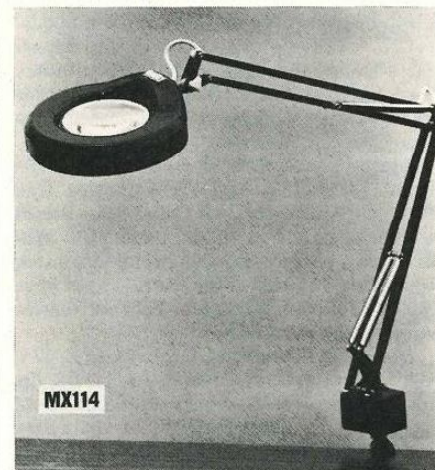
OPEN 7 DAYS A WEEK

HO - HOn3 - N - O - On3 - S - Sn3  
713 Center Street, Des Plaines, IL 60016

Phone: (312) 297-2118

Converter Kit No. 38 contains only brackets and hardware for bench mounting.

Ora Electronics, 20120 Plummer Street, P. O. Box 4029, Chatsworth, CA 91313, has introduced an illuminated magnifier lamp, No. MX114, \$59.95. It comes with a 5" distortion-free glass magnifier that magnifies three times; four-way positioning; 360-de-



MX114

When writing to advertisers,  
please mention you saw their advertisement  
in FINE SCALE MODELER

TAMIYA • MATCHBOX • TESTORS • HASEGAWA • OTAKI • MICRO-SCALE • MPC



## WAR AND PIECES

7 SOUTH MAIN ST.  
WEST HARTFORD, CT 06107

"FINE SCALE MODELS FOR FINE SCALE MODELER"

• CALL FOR HARD TO FIND ITEMS. No Catalog

203-232-0608

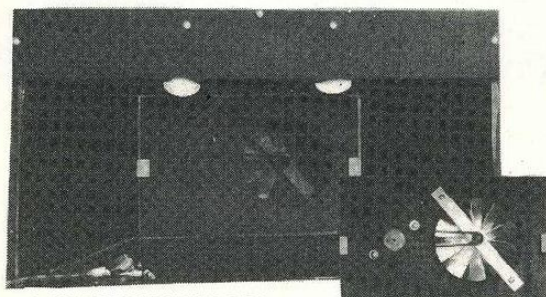
MasterCard • VISA • American Express

• REVELL • TAKSUDA • MONOGRAM • FUJIMI • AIRFIX • WILLIAMS BROS. •

• BLUEJACKET •  
• HELLER •

• LS • ITALERI • ESCI • KP •

## HOBBY SPRAY BOOTHS



- AIR FLOW DESIGNED FOR AIR BRUSHES
- BUILT IN LIGHT SOCKET (BULBS NOT INCLUDED)
- BECOMES A CURING OVEN BY ATTACHING FRONT COVER (INCLUDED WITH BOOTH)
- EXHAUST OUTLET SIZED FOR 4" DRYER VENT TUBE

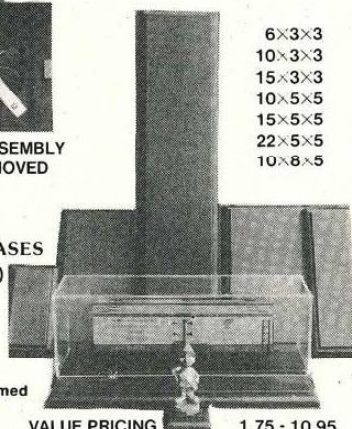
# SL 2 23x12x11 89.95

TUBE AXIAL FAN ASSEMBLY  
W/ELECTRICAL REMOVED  
FROM AIR STREAM

DISPLAY BASES  
(MOLDED ABS)

## DISPLAY CASE KITS

- 1/8" CLEAR ACRYLIC CASE PIECES - CUT TO SIZE FOR EASY ASSEMBLY
- FOR SMALL DIARAMA SCENES
- USED FOR DISPLAY MODEL CARS, TRAINS, MINIATURES, SMALL SHIPS & PLANES



VALUE PRICING 1.75 - 10.95

**AW  
INDUSTRIES**

Dealer and Distributor Inquiries Welcomed

290 NORTH BENSON AVENUE, UPLAND, CALIFORNIA 91786 (714) 946-1728

gree tilting or turning; 22-watt circular daylight fluorescent bulb; all-metal construction; spring balancing; and a heavy-duty mounting bracket. It is available in chocolate brown or ivory.

Pactra Hobby Products, 16946 Sherman Way, Van Nuys, CA 91406, is producing two new lines of paintbrushes. The camel hair lacquering brushes come in six sizes: 1/4", 3/8", 1/2", 5/8", 3/4", and 1"; prices range from \$1.05 through \$2.90 each, depending on the size. Also available are Oxford Series all-purpose camel hair paintbrushes in sizes 1 through 6; they retail for approximately 40 cents each.

**Catalogs.** Aeroprint, South Shore Road, Spofford, NH 03462, has released its 64-page aviation art print catalog No. 6.

The Arsenal offers books, magazines, military miniatures, plastic kits, and war games. To receive a catalog, send a stamped, self-addressed envelope to 1506 Lorraine Avenue, Bellevue, NE 68005.

Send \$3.00 to Auto World Modelshoppe, 701 North Keyser Avenue, Scranton, PA 18508, for the 132-page 1985 model car catalog.

Classic Motorbooks, P. O. Box 1, Osceola, WI 54020, has released its 144-page 1985 catalog, which lists nearly 6,000 titles. It sells for \$2.95, or is free with an order.

An illustrated catalog from CUSH, 6525 West Bluemound Road, Milwaukee, WI 53213, sells for \$5.00 (\$6.00 outside the continental U. S.). CUSH specializes in miniature figures of fact, fiction, and fantasy. The catalog, approximately 200 pages, comes in a loose-leaf plastic binder so you can add periodic updates from CUSH.

Available from Griffin Manufacturing Co., Inc., P. O. Box 308, Webster, NY 14580, is a free catalog of Grifhold tools, including knives, safety knives, cutters, burnishers, magnifiers, and pounce wheels.

The winter 1984-1985 book catalog from Historic Aviation, 3850 Coronation Road, Eagan, MN 55122, sells for \$1.00.

Brian K. Mitchell, P. O. Box 52414, Livo-



nia, MI 48152, is importing Alymer military miniatures. A 58-page full-color catalog listing more than 900 figures sells for \$5.00, which will be credited to your first \$50.00 order.

R. E. H. Distributing, 4415 Marburg Avenue, Cincinnati, OH 45209, has released its 1985 model car racing parts list and reference manual. The 90-page catalog sells for \$6.95.

Send \$1.00 to Sherrill Studio, P. O. Box 2264, Riverview, MI 48192, for a catalog of aviation prints. The \$1.00 is refundable with your first order.

Catalog No. 3 from Warren Tool Company, Inc., Route 1, Box 14A, Rhinebeck, NY 12572, sells for 60 cents. The 22-page catalog includes listings for carving kits, carving chisels, riffler files, riffler rasps, knives, and woodburning tools.

World War 1 Aero Bookshop, Box 142, West Roxbury, MA 02132, is offering catalog No. 26 for \$2.00. The 32-page catalog lists aviation, military, armor, and naval books.

**Miscellaneous.** Aero-Art Unlimited, 5751 East Scarlett, Tucson, AZ 85711, is the U. S. distributor for aviation posters produced by Key Publishers in England. Each poster measures 16" x 22 1/2" and sells for \$3.50.

Annual subscriptions to *Aeroplane Monthly*, a British magazine for aviation enthusiasts, are available for \$25.00 (air freight service) or \$45.00 (airmail) from John Barrios, Business Press International (U. S. A.), 205 East 42nd Street, New York, NY 10017.

Nine WWI and WWII posters imported from England are available from Biggin Hill Publ., P. O. Box 786, Freeport, NY 11520. Each poster measures 20" x 30" and sells for \$7.00.

Cleveland Model and Supply Co., 10307 Detroit Avenue, Cleveland, OH 44102, offers model aircraft plans in 3/8", 1/2", 3/4", 1 1/2", 2", and 3" scales. A list of plans is \$1.00.

A mold-making kit to produce 15 mm to 77 mm items such as figures, cannons, and miniature soldier parts is available from Coastal Enterprises, 315 Little Falls Road, P. O. Box 44, Cedar Grove, NJ 07009. The kit sells for \$33.00 plus \$3.00 shipping. Send a stamped, self-addressed envelope for a brochure; \$1.00 for a catalog of soldier molds; or \$2.00 for the catalog and a miniature soldier.

New from Densa Fine Arts, 536 Morse Avenue, Schaumburg, IL 60193-4563, are two limited-edition aviation art prints signed by artist Jim Stovall. Stovall's print of an FB-111 measures 14" x 35", while the KC-10 print measures 16" x 29". Each is \$25.00; add \$3.00 per order for postage.

Krazy Glue, Inc., 53 West 23rd Street, New York, NY 10010, has prepared a free booklet and catalog sheet covering topics such as which glues work best on specific types of materials, how to prime surfaces, how much time to allow for various glues to set, how to store the glues, and how to clean up. Ask for the Krazy Glue hobby and craft booklet (No. 510-042) and catalog sheet 509-035.

Peover Model Promotions, 17 Birchwood Drive, Lower Peover, Knutsford, Cheshire WA16 9QJ, England, is selling hand-finished, assembled models of fire, ambulance, police, promotional, and public service vehicles. The line is based on models from com-

SUPPORT  
I  
P  
M  
S

Model By: Mike West

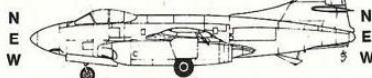
FALCON  
(1/48th Scale)  
Be2c

Photo By: War Eagle

**WAR EAGLE**  
• INCORPORATED •

**FALCON**

VACUFORM



1/72 F3D (F-10) "Shynight"  
\$10.95 (UPS Shipping Included)

GULL MODELS VACUFORMS

(1/48 th Scale - Includes Decals & Cast Parts)

Macchi M.C.202 "Folgore" ..... \$17.95

Dewoitine D.520 ..... \$17.95

(Dealer Inquiries Invited)

**WAR EAGLE**  
CHECK OR MONEY ORDERS ONLY.

(Canadian orders add \$1.00)

ALL CONTINENTAL U.S. orders

shipped UPS POSTPAID.

© 1984 War Eagle, Inc.

carries KOSTER, GULL, WINGS 48, FALCON, DETAIL & SCALE, & BARE METAL

Illustrated catalog \$2.50

DEALER INQUIRIES INVITED ON GULL MODELS & WAR EAGLE

ALL CORRESPONDENCE SHOULD BE ADDRESSED TO THE ABOVE P.O. BOX

85 - 2

SUPPORT  
I  
P  
M  
S



P.O. Box 255  
New Baltimore, Michigan 48047  
(313) 725-7345

N	E	W
(1/48) B-57 "Canberra" .....	\$24.95	E
(1/48) Hawker "Sea Fury" .....	\$13.95	W
(1/48) Northrop F-89D "Scorpion" .....	\$19.95	
(1/48) Lavochkin La 5FN .....	\$12.95	
(1/48) Seafire FR.47 .....	\$12.95	
(1/48) Martin Baker M.B.5 .....	\$12.95	
(Includes IP, Consoles & Serial No. Decals)		
(1/48) Focke-Wulf Ta 152H .....	\$12.95	
(1/48) Be2c .....	\$12.95	
(1/32) Fokker D VIII .....	\$12.95	
(1/48) Spitfire XIV (conversion) .....	\$ 6.95	
(1/72) Mistel 2 (long nose) .....	\$ 2.95	
(1/72) TRIPLE Conversion #1 .....	\$12.95	
(F - 100F • TA - 7C • RF - 8)		
(1/72) TRIPLE Conversion #2 .....	\$12.95	
(C-1 Trader • EP-3E Orion • 3/4 Banshee)		
(1/72) Martin Baker M.B.5 .....	\$12.95	
(Includes IP, Consoles & Serial No. Decals)		
(UPS Shipping Included)		

## Treat Your Eyes to the STUDIO SPEC™ Magnifier Lamp

Now available at the low price of only \$59<sup>95</sup>

A small price to pay for the long range benefits of this high quality Illuminated Magnifier Lamp. The STUDIO SPEC lamp offers comfortable, shadow-free illumination for your work area. The ideal light source for repairs, woodworking, drafting, model making, artwork and more. A 22 W circular, daylight fluorescent bulb (included with your lamp) and a full 5" polished, distortion-free glass magnifier (X3) highlight your most intricate handiwork. This UL listed design includes steel construction, spring balancing and an extra long 45" reach.

Available in chocolate brown or ivory. Only \$59.95 each. Buy 5 or more for the low price of \$54.95 each.\* Order today! (Order No. MX114).

**Special Bonus!** With your purchase of one or more Magnifier Lamps, order our LTS103 Bench Lamp for only \$10.95 each. (Plus \$2.80 ea. shipping). UL listed to 100 W with porcelain socket and mounting brackets.



**ORDER TOLL FREE**

for fast delivery on credit card orders call:

**1-800-423-5336**

In Calif. call:

**1-800-382-3663**

Local Calif. call:

**818-701-5848**

Exclusive One Hour Shipping

\*Please include \$5.00 ea. for shipping in the continental USA.

Qty.	Order No.	Color	Price	Shipping	Ext.
_____	82-MX114	_____	\$59.95*	\$5.00	_____
_____	82-LTS103	_____	10.95	2.80	_____
_____	82-MX12-4R	Replacement bulb for MX114	5.95	2.00	_____
<input type="checkbox"/> MasterCard <input type="checkbox"/> VISA # _____ Exp. Date _____					
<input type="checkbox"/> Certified Check/Money Order _____ Signature _____					
Name _____ (Please print)					
Address _____					
City _____ State _____ Zip _____					
*Only \$54.95 for 5 or more.					

**ORA**  
ELECTRONICS  
A DIVISION OF ALLIANCE RESEARCH CORPORATION

20120 Plummer Street  
Chatsworth, CA 91311



panies such as Corgi, Dinky, Matchbox, and Solido.

Pilgram Hall Museum, 75 Court Street, Plymouth, MA 12360-3891, has released a plans packet for a model of the *Sparrowhawk*, a seventeenth-century English ship wrecked off Cape Cod, Massachusetts, in 1626. The packet includes plans for lines and hull details; sail plan showing deck line, sails, and rigging; plans for rigging and fitting specifications; photo of the completed model; 22-page illustrated booklet covering the history of the *Sparrowhawk*; and painting notes. It sells for \$15.00 plus \$2.00 postage.

Russ Porter's line of lithographs includes several steamships: *Agawa Canyon* depicted in 1974; *Aquitania*, 1930; *Carl D. Bradley*, November 18, 1958; whaleback passenger steamer *Christopher Columbus*, 1931; *Lusitania*, 1909; Grand Trunk Railway car ferry *Madison* on Lake Michigan; and the *Titanic*, April 10, 1912. Another lithograph shows the U. S. Navy dirigible *Akron* in 1932. An illustrated brochure is available from Porter at 2228 South 81st Street, West Allis, WI 53219.

Quality Castings Inc., P. O. Box 11714, Alexandria, VA 22312, produces a line of metal castings of WWII and postwar armored vehicles and infantry figures. The vehicles are 1/108 (approximately 15 mm scale), while the figures are 15 mm. Prices are from \$1.50 to \$19.75, with most in the \$3.00 to \$5.25 range. Assembled and painted vehicles are available at higher prices.

New from Repla-Tech International, 48500 McKenzie Highway, Vida, OR 97488, are 1/16" = 1' drawings by Edward H. Wiswesser

of U. S. Naval frigates, destroyers, and cruisers.

Available from Sagapress, Box 21, Sagaponack, NY 11962, are measured drawings for 25 wooden vessels from the Historic American Merchant Marine Survey. Included with the drawings is information such as dimensions, tonnage, origins, and owners. Basic sizes of the drawings are 17" x 22" and 17" x 35".

For a copy of the *Mini Pullin News*, send a long, stamped, self-addressed envelope to Jeff Sanders, 1010 Pleasant Street, Ironton, OH 45638. This newsletter is devoted to table-top truck pulling.

**Coming events.** Members of the South Bay Model Shipwrights will exhibit their nonoperating models of wooden sailing ships February 9 (10 a.m. to 5 p.m.) and February 10 (11 a.m. to 3 p.m.) at the Wood Tool Center, 2545 Showers Drive, Mountain View, California. Admission is free. For more information telephone Jean Eckert at (415) 964-0561 or George Swierczynski at (415) 324-1811.

IPMS/North Central Texas will host a contest and flea market March 9 at the Quality Inn, Irving, Texas. For information, send a stamped, self-addressed envelope to Contest '85, 108 South Lee Street, Irving, TX 75060, or phone (214) 438-9233 during the day or (214) 226-3675 after 6 p.m.

The Knoxville Scale Modelers' Association will hold its annual contest March 16 at the Holiday Inn World's Fair, Knoxville, Tennessee. Registration begins at 9 a.m. The cost is \$5.00 for the first model entry and \$1.00 for each additional entry. Awards

will be given in aircraft, armor, miscellaneous, and novice categories. Further information is available from KSMA, 205 Destin Circle, Knoxville, TN 37922.

An airliner slide show and mini-convention, sponsored by the South Florida Airline Historical Association, will take place March 23 at the Viscount Hotel Playhouse, 500 Deer Run, Miami Springs, Florida. General admission is \$2.50, and a special hotel rate is available. For more information, write to Don Levine, 10 Northeast 131st Street, North Miami, FL 33161.

Noreastcon XIV, the IPMS Region 1 convention, will be held April 26 and 27 at the Sheraton Mansfield, exit 7A off I-95 North, Mansfield, Massachusetts. Send a stamped, self-addressed No. 10 envelope to Jim Guiney, 59 Summit Street, Arlington, MA 02174, for further information.

The Western Reserve Chapter will host the IPMS Region IV convention April 26 and 27 at the Holiday Inn-Independence, Cleveland, Ohio. Write to Andy Vidra, 20090 Champ Drive, Euclid, OH 44117, for details.

The Indianapolis Adam's Mark Hotel will be the site of the 1985 IPMS national convention, July 18-21. For more information write to IPMS Indianapolis, 1985 National Convention, P. O. Box 88295, Indianapolis, IN 46208.

Military miniaturists, figure painters, military collectors, and toy soldier enthusiasts in the Richmond, Virginia, area interested in joining a club should contact Woody Childs at (804) 745-3819 in the evening or Bob Graham at (804) 285-8055 during the day.

**FSM**

# AIRLINER KITS AND DECALS

**FAST Mail Order service with NO minimum order. More than 180 different decals to choose from! DEALERS WELCOMED. We ship anywhere, NO C.O.D.s. WRITE TODAY!**

Photo shows our NEW YORK AIR decal on the MPC DC-9-30



## AVAILABLE CATALOGS:

OUR 1985 KIT, DECAL & POSTCARD CATALOG	\$ 1.00
OUR COLOR SLIDE CATALOG (15000 SLIDES)	\$ 3.00
BOTH CATALOGS AT ONCE (SAVE 50¢).....	\$ 3.50

**Credit card phone orders 10:00AM-10:00PM Pacific 7 days a week or write:**

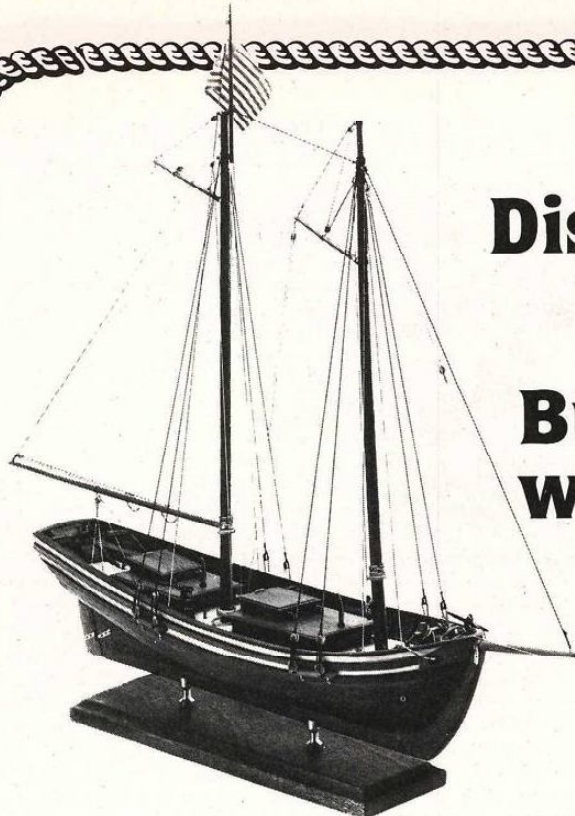
**(408) 629-2121**



**ATP** INCORPORATED  
3014 ABELIA COURT  
SAN JOSE, CA. 95121







# Discover the world's oldest hobby!

## Build this beautiful wooden ship model.

**Special offer for those who have never built a ship before!**

Wouldn't you love to build this historic ship model? It's a true-to-scale, 21" replica of the 2-masted schooner *Swift*, a Virginia pilot boat of 1805. Well, now you can! And you don't have to be a skilled craftsman to do so.

### It really isn't hard

Even if you've never built a model before, you can experience the relaxing pleasure and pride of accomplishment that is offered by this fascinating hobby. You can build the *Swift*. The secret's in our kit, designed especially for the first time modeler, with pre-cut parts that make assembly easy. Clear, large scale plans and instructions that virtually take you by the hand and guide you every step of the way through hours of the most relaxing fun you'll ever have. And when completed—a museum quality model you'll display with pride, with gleaming brass fittings, walnut planked hull, delicate rigging—lifelike in every detail.

### Quality you can see and feel

The materials in our kit may be better than those used in the original *Swift*. The keel section and frames are pre-cut plywood, ready for quick assembly. The *Swift*'s hull is planked twice; once with thick, flexible lime-wood for strength, then overlaid with planks of African walnut for lasting beauty.

You won't have to make the fittings—we've done that for you. Our kit contains ready-to-use blocks and deadeyes

of rare, yellow boxwood. We include eyelets, bracers and belaying pins—over 70 parts of solid brass! Even the cabin door hinges are brass, as are the 250 miniature nails you'll use to fasten the planking to the hull and deck. And, since the original wooden *Swift* had no plastic parts, our kit doesn't either—*anywhere!*

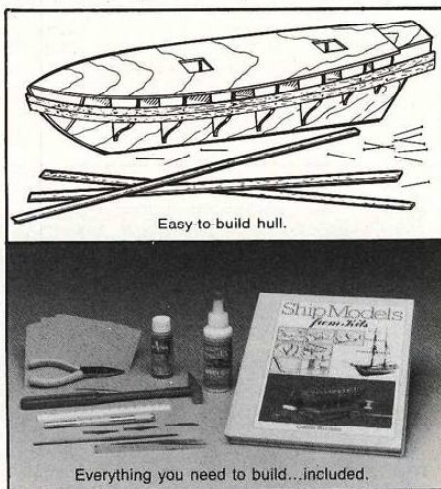
Creative? And how! Overwhelming? Not a bit! But be prepared for hours of the most challenging, engrossing, relaxing fun you've ever had.

### An "everything you'll need" special offer, with free tools and handbook.

We want to introduce you to this great hobby, *now!* So we've made it easy for you to get started. Our special offer includes the *Swift* kit plus all the tools you'll need to build her: pliers, hammer, knife, file, tweezers, sandpaper, glue, wood oil, and more. You'll also receive a free copy of "Ship Models from Kits," a 110 page beginner's guide. You don't have to buy anything else. The tools normally cost \$17; the book retails for \$7.95. But they're yours, FREE when you buy the *Swift* kit at its regular price of \$49.95 (plus \$5.00 insured delivery).

### Credit card holders order toll-free

Call 800-228-2028, ext. 68, 24 hours a day. In Nebraska, call 800-642-8300. Or use coupon below to send check or money order.



Easy to build hull.

Everything you need to build...included.

### Miniature Cannon Kit Bonus!

Set of two solid brass cannon on walnut carriages to be mounted amidship. \$4.00 value, sent FREE with your order.



### model expo, inc.

23 Just Road, Fairfield, N.J. 07007

### MODEL EXPO, INC. 23 Just Road, Fairfield, NJ 07007 Dept WSJ-185

Please send me \_\_\_ kits of the *Swift* at \$49.95 plus FREE tools, book and cannons. Check or money order enclosed. (Add \$5.00 for insured delivery. NJ residents must add 6% sales tax.)

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

*If less than delighted, you may return your purchase within 30 days for a full refund.*



116 page full color hobby catalog sent FREE with your order.



Every FSM Workbench Review is a first-hand report by a modeler who has actually built the kit or used the product. While our reviewers are encouraged to compare the products to similar ones in their experience, evaluation is of secondary importance; the reviewer's primary goal is to provide a detailed description of the product so FSM readers can evaluate it for themselves. Models shown in Workbench Reviews are built straight from the box.

**Kit:** No. 691, AC-130A Gunship

**Scale:** 1/72

**Manufacturer:** The Testor Corporation, 620 Buckbee Street, Rockford, IL 61101

**Price:** \$18.00.

AFTER THE SUCCESS of the Minigun-equipped AC-47 "Spooky" gunship, the USAF wanted a more heavily armed aircraft to succeed it. The C-130 Hercules was the logical choice and two AC-130 Specter variants with several changes in armament have been produced. This Italeri kit (with new decals, instructions, and box by Testor) represents the AC-130A with three-blade propellers and armed with two Miniguns, two Vulcan cannons, and two 40 mm Bofors cannons.

The kit contains 178 parts molded in black and clear styrene. The decals include markings for two aircraft, one in three-color camouflage topside and black below, and an overall gunship gray aircraft. The detail is finely raised panel lines of above-average quality. The major disappointment of the kit was the lack of interior detail beyond the cockpit. The fuselage of the gunships held more than the guns — ammunition storage, flares, and electronics for the surveillance equipment crowded the cargo hold. None of



All photos, FINESCALE MODELER: A. L. Schmidt or Paul A. Erier unless otherwise credited.

this is included and if the model is built with the cargo ramp open, this shortcoming becomes visible. I chose to close the cargo ramp, even though most photos of AC-130s on the ground show it open.

The instructions are typical of Testor's reboxed Italeri kits — excellent, with drawings of the two versions and references to Federal Standard paint colors. The parts fit together well, especially the wind deflectors and electronic shields on the left side of the fuselage. The axles on the main gear struts were a bit too long and prevented the wheels from fitting into the bay and onto the axle. To solve the problem, I shaved the axles down and filed away a little plastic from the lip on the outboard edge of the bays.

Since the model is large, I decided to paint the fuselage before the wings were attached.

This also made it easier to paint the inboard engine nacelles. After I attached the wings and sanded the seam smooth, all I had to do was paint over the joint. I installed the nose gear strut but didn't glue it in until the model was nearly finished to avoid damaging it. I also left off the main gear doors and other easily damaged small parts until later.

The finished model is big — 22" wingspan, 16 1/4" long, and 6 3/8" high, and matches the dimensions given in Squadron/Signal's *C-130 Hercules in Action*. Because of the size and complexity of the kit, finishing it took more time than I expected — 50 hours, a lot of it painting the exterior. I'm happy with the results, but can only recommend the kit to experienced modelers.

Dennis Moore

**Kit:** No. 749, Lotus 49B

**Scale:** 1/24

**Manufacturer:** Heller, distributed by Polk's Model Craft Hobbies Inc., 346 Bergen Ave., Jersey City, NJ 07304

**Price:** \$14.95.

THE LOTUS 49B first appeared in 1967. Its radical wing, which provided more than 200 pounds of pressure (and increased traction) on the rear axle, was installed for the 1969 racing season. Racing greats Graham Hill, Jim Clark, and Joseph Siffert drove the cars to victory in the Grand Prix circuit during the late '60s.

Heller's 1/24 scale Historic Racing Cars series may be new to many modelers, but they are reissues of kits from the late '60s and early '70s. The Lotus kit features 83 parts molded in red and clear styrene and black vinyl tires. Although the first issue of this kit had chrome parts, this reissue does not. The detail is above average, especially the Ford Cosworth engine and suspension. The screens over the fuel injector intakes are simulated by clear plastic orbs with etched screen detail. The tires are glossy black and so soft that they resisted my ef-



forts to sand the mold flash from them with sandpaper. The clear windshield is thick and out of scale.

The instructions are easy to follow and the decal sheet well printed. The kit fit to-

gether well, better than most kits of this vintage. Assembly is complicated by the large number of parts and extra care was needed to align them properly. I sprayed all the parts that normally would have been



# WHEN YOUR BLACK BOX RUNS OUT OF TRICKS, YOU HAVE TO INVENT YOUR OWN.



The deadly ballet of aerial warfare has become blink-of-an-eye encounters in MiG Alley, Vietnam, the Sinai and the Falklands. Seat-of-the-pants razzle-dazzle has been replaced by feather touch precision. Yet despite AWACS guidance and sophisticated "black boxes," it's still the steel nerves and quick stick work of the men flying the jets that win battles.

*Fighting Jets* shows you state-of-the-art combat in the computer

age. You'll view swirling dogfights through gun cameras, streak on attack a few feet over the desert, endure crushing G forces, outmaneuver radar-guided SAM missiles, unleash Sidewinders, duel MiGs and Mirages one-on-one.

It's an exciting introduction to THE EPIC OF FLIGHT library from TIME-LIFE BOOKS. More than 100 photographs and battle paintings highlight your reading. See how the Germans astonished the Allies with the first turbo jets; the F15 Eagle accelerates straight up; Britain's remarkable Harrier jump jet destroyed faster Argentine jets, and much more! Detailed illustrations take you inside cockpits, diagram dogfight

Approximately 176 pages of text, dramatic illustrations, combat photos, close-ups of famous aircraft. 9 1/4" x 11 1/4".



tactics, and portray an awesome array of today's fighters.

Volume by volume, THE EPIC OF FLIGHT retells the adventure story of our century.

You're invited to take *Fighting Jets* for 10 days FREE. Keep it and pay only \$13.95 plus shipping and handling. You can then collect additional volumes in the series, including *The Carrier War*, *The Luftwaffe*, *Knights of the*



Heart of a Harrier: the jump-jet engine.

*Air, America in the Air War*. Books come one at a time about every other month, always for a free examination. There is no minimum number to buy; you may cancel at any time. If you decide not to keep *Fighting Jets*, return the complete

package within 10 days with no further obligation. To start the action, just mail the reply card today!

Price subject to change.

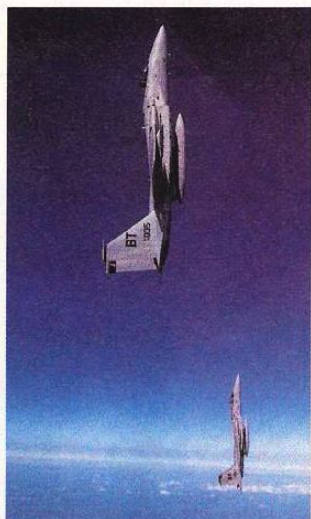
©1983 Time-Life Books Inc., Time & Life Bldg., Chicago, IL 60611

If card is missing, mail to:  
TIME-LIFE BOOKS  
Time & Life Bldg.  
Chicago, IL 60611

**TIME  
LIFE  
BOOKS**

**YES,** I would like to see *Fighting Jets* as my introduction to THE EPIC OF FLIGHT series. Please send it to me for a 10-day free examination. Also send me future volumes under the terms described in this ad.

Name \_\_\_\_\_ (Please print)  
Address \_\_\_\_\_ Apt. \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_  
All orders subject to approval. CVC8X0



## THE EPIC OF FLIGHT TEST FLY THE FIGHTING JETS FOR 10 DAYS FREE.



For Your Model Building Enjoyment:

## Fine Products For Quality Modelers

TOOLS, SAGAMI MOTORS,  
DRIVE UNITS & COMPONENTS,  
WHEELSETS, BRASS MODELS,  
GEARS, BOOKS, METRIC  
HARDWARE & MORE!



See Your NWSL Dealer or Write  
Direct if Unable to Locate.

**North West  
Short Line**

Box 423, Seattle, WA 98111

## ORIGINAL COLOR SLIDES

- Hundreds of slides listed each month
- All types of aircraft listed
- Quality original slides

Send for most recent copy of **FREE** monthly  
list or send 50¢ for list & sample slide.

**AERO  
RESEARCH**

4672 Flamingo Park Ct. -B  
Fremont, CA 94538

# Compucolor

Authentic Enamels for Modelers  
\$1.29 per 1/2 oz. tin

Full Range of Aircraft &  
Armor Colors  
Computer Matched Colors

**AEROCUB**

White Metal Castings

Propellers, Engines  
Machine Guns, Ejection Seats  
1/72 and 1/48 Scale

Why rob parts from kits?

Mail order for  
Rareplanes, Contrail  
Formaplane

Kit Collectors' Corner  
Milliput Putty  
Full Line of Modeler's Needs  
Pegasus Kits

Books, Magazines & Tools

Try Us, You'll Like Us.

MasterCard & Visa

Send Two 20¢ Stamps for Lists To:

**ROSEMONT**

**HOBBY SHOP**

P.O. Box 139  
Trexler Mall  
Trexlerstown, PA 18087  
(215) 398-0210

Compucolor Paints  
Dealer Orders Welcome

chromed with Hobsco Aluminum, then painted the rest of the kit with Testor gloss paints.

The finished model compared well with photos I have of this car. Due to the com-

plexity of the engine and suspension assemblies, I recommend the model to experienced builders. It took me over 40 hours to finish mine, but I'm pleased with the results.

Bill Gebhard



**Kit:** No. 1089, SdKfz 250/8 Conversion

**Scale:** 1/35

**Manufacturer:** Air Press Models, available from The Arsenal, 1506 Lorraine Ave., Bellevue, NE 68005

**Price:** \$10.00.

VACUUM-FORMED ARMOR conversions are not as plentiful as their similarly molded aircraft cousins, but with few new injection-molded armor kits being released these days, they present new worlds to conquer. This kit is made to convert MRC-Tamiya's SdKfz 250/3 (kit No. 3613) and includes 8 vacuum-formed parts in white styrene along with 24 injection-molded parts for the 75 mm KwK37 L24 gun (from the Italeri SdKfz 234/3 Armored Car kit).

The vacuum-formed parts include detail, but are not on a par with injection-molded parts. There are no decals. The biggest drawback to the kit is the instructions. There are no step-by-step directions and only a rough drawing of how the vacuum-formed parts go together. I had to repeatedly test fit the parts and make adjustments to make them fit properly on the cut-down

Tamiya chassis. The gun assembly portion of the instructions came from the Italeri instruction sheet, but they don't show how the gun is mounted to this vehicle.

I recommend this assembly sequence: First cut down the Tamiya chassis as indicated by the shaded portion on the Air Press instructions. Next, assemble the modified lower chassis as in Tamiya's steps 1 through 9. Then assemble and install the vacuum-formed parts onto the chassis. I detailed and painted the interior next (Tamiya steps 11 and 12), then assembled and painted the 75 mm gun. The side guards can be modified from part Nos. 95 and 97 from the injection-molded sprue. Since there are no painting directions, I had to consult my references for color information.

Although there were times during construction when I wondered if it was worth all 80 hours I put into it, I'm pleased with the results. The finished model scales well with information in *The Encyclopedia of German Tanks of WWII* by Peter Chamberlain and Hilary Doyle. This conversion is not for novices, but it fills a gap in armor model collections.

Glenn Kreinus

**Kit:** No. 444012-2, ATH-14-ST Tortoise

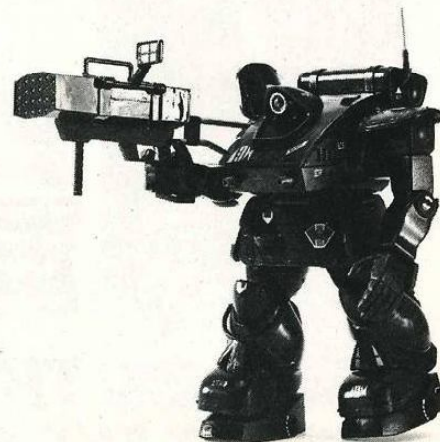
**Scale:** 1/35

**Manufacturer:** Takara, distributed by Twentieth Century Imports, 4732 E. Pearl, Boulder, CO 80303

**Price:** \$6.00.

IMAGINE FOR A MOMENT this machine slogging its way out of a swamp, ready to loose a barrage of lethal weapons from its armored fists. Such imaginings are the stuff that makes up the "new wave" of modeling; polymorphic machines battling it out on unfamiliar terrain for unknown causes. Until the Japanese sci-fi TV programs make it to the U. S., we'll have to use our imaginations to explain these curious, and fun, models.

Takara's Tortoise is one of the armored fighting suit variety. No, it's not a suit that





fits over a human body; the human operator sits in the command chair in the upper body and views the battle through the cycloptic sensor in the head. The kit contains 91 parts molded in gray and light green styrene. It features optional open and clenched fists and articulated ankles, knees, hips, waist, shoulders, elbows, and wrists. Some of the joints are covered by hinged armor plates. Topping off the brute is a 22-round weapon launcher with framing sight.

The model went together easily with a little extra care used when assembling the joints. There is a fine line between too tight (joints won't move) and too loose (joints won't hold position). I used super glue to as-

semble the model. The instruction diagrams are clear, but there was no English on my sample. The six-color decal sheet consists of 58 items, mostly stencil-type placards to be scattered all over the machine. Since there were no clear parts, I bought a 4 mm clear plastic eye from a craft store and inserted it in the main sensor.

The finished model looms 5¼" tall. I spent 15 hours on it, and I intend to build more like it. Unlike other machines, the Tortoise isn't overloaded with guns and rockets — it looks almost practical in a mean sort of way. This kit is a nice change of pace that can be built by modelers with a couple of years' experience.

*Randy Guenin*



D. H. Minton

**Kit:** No. 010, Fairey Albacore

**Scale:** 1/72

**Manufacturer:** Pegasus, Strebor House, Thurston Park, Whitstable, Kent, England

**Price:** \$11.95.

DESIGNED AS THE SUCCESSOR to the Fairey Swordfish, the Albacore served briefly in the Fleet Air Arm (March 1940 to November 1943) and was replaced by yet another Fairey product, the Barracuda. A torpedo bomber by design, the Albacore also served as conventional bomber, artillery spotter, and mine layer.

An experienced modeler with lots of time can make an outstanding replica from this kit, but a beginner will have trouble. Pegasus provides 18 parts molded in heavy white and clear styrene. Surface detail consists of rough recessed lines and the canopy is thick and cloudy, although the canopy frames are clearly scribed — an excellent pattern for a vacuum-formed replacement.

The instructions provide patterns for the struts and other small parts that are not included in the kit. There is a three-view drawing on the instructions, but it doesn't show the camouflage pattern of the top fuselage and wings; I had to find this in my ref-

erence material. There are no decals and no individual aircraft markings are given on the instructions. Pegasus recommends Compu-color paints and Modeldecals WWII sheets for use on the model.

The assembly sequence is straightforward, but getting the pieces to line up was hard. I had to sand the bonding surface of each fuselage half considerably to narrow the fuselage so the canopy would fit. The canopy was shorter than the cockpit opening, so I had to add filler to the corners at the base of the windscreen and rear of the canopy. I discovered that the lower wing roots were too far forward, eliminating the slight stagger of the wings of the real Albacore. I drilled out the poor engine detail in the cowlings and substituted an engine from my spares box. Add to all this the biplane rigging and you've got a major project.

The kit scales closely to the dimensions given in the March 1978 issue of *Air International*. The model took 41 hours to complete, but I'm satisfied with the finished product. I can recommend this kit only to advanced modelers who don't mind scratch-building basic detail parts, hunting for color and marking information, and spending extra time sanding and fitting parts. *Al Jones*

**Kit:** Vought O2U-1 Corsair

**Scale:** 1/48

**Manufacturer:** Wings 48, 3349 Wildridge Drive N. E., Grand Rapids, MI 49505

**Price:** \$16.95.

THE EARLIEST CORSAIR was a U. S. Navy observation aircraft of the late 1920s, and this is the first kit to be produced of the biplane. The 79-part vacuum-formed kit contains 2 injection-molded sprues of strut

stock, and a white metal engine and propeller. A piece of clear plastic is provided for the windcreens, but it's too thick for the scale. An excellent decal sheet provides markings for a Navy and a Marine Corsair.

The detail is above average for a vacuum-formed kit. However, the interior consists only of a floor and two seats; the rest is up to the modeler. Exhaust pipes, bomb racks, scarf ring, Lewis gun, and other minor details will have to come from the spares box.

## Styrene... Fast, Accurate, Versatile

Use precut styrene strips and sheets on your next project.

**evergreen  
scale models**

Send S&AE to Dept. 136 for info

1414-127th Pl. N.E., Suite 107  
Bellevue, Washington 98005

## Needing Help Finding Kits?



send \$1.00  
for sample  
issue

• 3213 HARDY DR.  
• EDMOND, OKLA. 73034

When writing to advertisers,  
please mention you saw  
their advertisement in  
**FINESCALE MODELER**



## Paul Freiler's HISTORICAL MODELS

19510 Hawthorne Blvd  
Torrance, California 90503

(213) 542-6391

Hours: Mon-Sat 10-9, Sun and Holidays 11-6

### SPECIALIZING IN PLASTIC KITS

- Aircraft
- Armor
- Automobile
- Ships

### TOOLS

- Unimat
- X-acto
- Dremel
- Paasche

### GAMES

- Software
- D&D
- Strategy
- RPG

### BOOKS

- Aircraft
- Ships
- Automobile
- Armor

### ALL MAJOR MODELS AND MAGAZINES—BOTH FOREIGN AND DOMESTIC

- MICROSCALE, SCALE MASTER, ATP, FOWLER, ETC. DECALS
- POLLY S, FLOQUIL, HUMBROL, PACTRA, TESTORS, TAMIYA, PAINTS
- HO TRAINS AND ACCESSORIES



48 LINES OF  
HOBBY PRODUCTS  
SOME ARE . . .

**FREE**

SEND LONG SASE (40¢ stamps)  
FOR INFORMATION PACKET TO:  
BARGAINS GALORE  
BOX 3151 LA HABRA, CA 90631

## Americal / Gryphon

DECALS FOR  
SERIOUS MODELLERS

SOLE US DISTRIBUTOR  
FOR

**merlin  
models**

SEND 40¢ (STAMPS) OR  
2 I.R.C.S FOR OUR CATALOG



4373 Varsity Lane  
Houston, TX 77004 U.S.A.

Please mention FINE SCALE MODELER  
when writing to advertisers

## APC HOBBIES BOX 122

EARLYSVILLE, VA. 22936

BELL

**XV-15**

TILTROTOR

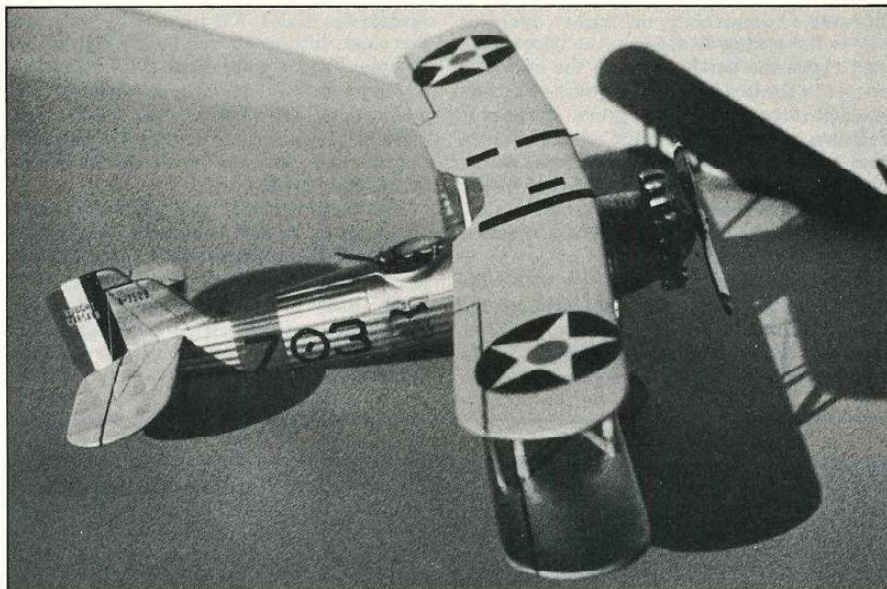


**NEW**

1/84 SCALE  
5.00 ea

mail order  
catalog \$1.00

MC/VISA  
PHONE 804-9732705



D. H. Minton

The kit features optional wheels and floats.

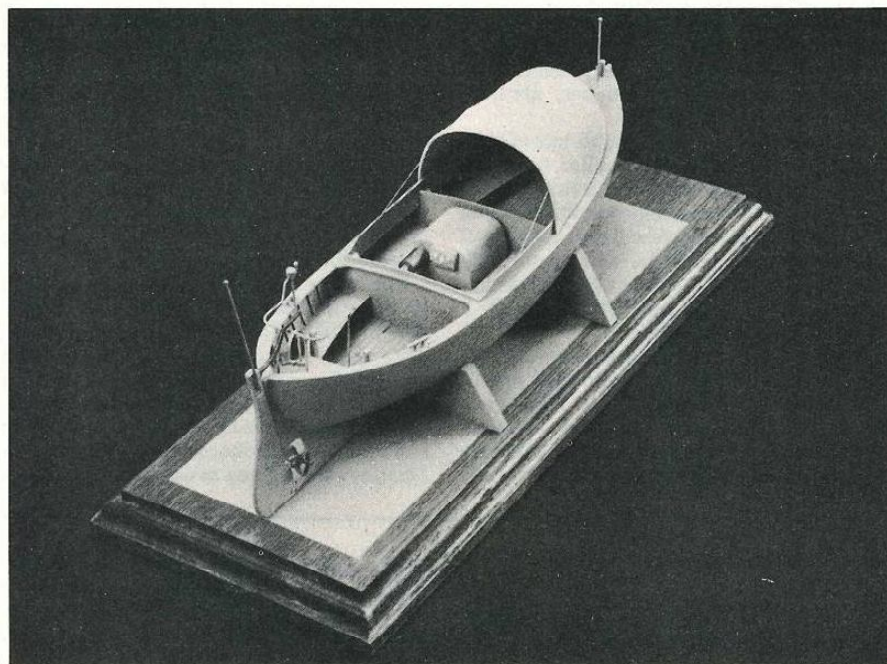
Although the kit fit together well, I had trouble with the trailing edges of the wings. The rib detail is too pronounced here, so I recommend that you carefully sand down these surfaces from the inside, then sand the rear of the ribs from the outside to avoid trailing edges that would be too thick. I used a Popsicle stick as a spar for the lower wing.

Although the instructions have nice drawings, it is difficult to produce the proper strut and landing gear configurations using them alone. There are no templates for the windcreens, either. I substituted wheels from a 1/72 scale Matchbox Walrus. The engine poses a problem; the

cylinder heads project from a streamlined fairing on the nose. To install the metal engine I had to cut this fairing in half and cut out the cylinder ports. The injection-molded struts were an asset; I cut them to the proper lengths by using the strut outlines on one of the vacuum-formed sheets.

The kit comes pretty close to scale dimensions. The best reference for this aircraft is the February 1973 issue of *Wings*. The model took 50 hours to complete, 20 hours just to paint, decal, and rig. Because of the vague instructions and the inherent problems of biplane models (struts and wires), I can only recommend this kit to experienced builders.

D. H. Minton



Kit: No. 2632, U. S. Navy 26' Whaleboat

Scale: 1/32

Manufacturer: Staubitz of Buffalo, 105  
Hollybrook Drive, Williamsville, NY 14221

Price: \$14.95 plus \$1.40 postage.

**BUILDING THIS VACUUM-FORMED** kit is similar to building a wooden ship kit, but not as difficult. The kit contains 31 parts including vacuum-formed outer hull, inner hull, engine cover, transmission hous-



ing, and canopy. Also included are .030" styrene sheets, strips, and rods, six white metal castings, and copper wire. The rudder, upper decks, bulkheads, and stern seats are cut from the styrene sheet with the aid of templates provided in the instructions. There are no decals.

The level of detail is adequate. The molding of the outer hull is good, but the plastic was drawn dangerously thin at the skeg (rear of the keel). I recommend filling it from the inside with sheet styrene, super glue, or epoxy to keep it from crushing. The instructions tell exactly what to do but are weak in explaining how to do it. The scale drawings are good except for the engine area; it's difficult to see where everything goes without either perspective views or photos. I found the templates for the bulkheads to be 1/8" too high, so I cut them down to fit.

It is difficult to solder the copper wire for

the helmsman's railing. First, each piece of wire should be tinned. I also used small alligator clips as heat sinks on each side of the joint I was soldering to keep the heat from melting the previous joints. I found it difficult to install the propeller shaft through the bulkhead to the engine. The warning in the instructions about the liberal use of liquid cement should be taken seriously since too much could melt the thin moldings.

I made a wood base and cradles to display the model. The 9 3/4"-long model scales almost perfectly, measuring 25' 10" — just 2" off the advertised 26'.

Cutting so many parts from sheet styrene, the careful handling of the vacuum-formed parts, and soldering make this a project for advanced modelers, preferably with experience in vacuum-formed kits. I spent 25 hours on it and I'm happy with the finished model.

*Al Jones*



Phillip Friddell

**Kit:** No. D021, F-20 Tigershark

**Scale:** 1/72

**Manufacturer:** Hasegawa, imported by Minicraft Models, Inc., 1510 West 228th St., Torrance, CA 90501

**Price:** \$5.50.

THE LATEST IN THE LINE of Northrop fighters that began with the F-5A Freedom Fighter and T-38 Talon, the F-20 (formerly designated F-5G) forgoes the twin J81 engine concept in favor of a single, large, advanced-technology F404 engine. The results bring the F-20 close to the performance of the F-16 Fighting Falcon.

Hasegawa's kit contains 49 parts molded in light gray and clear styrene. The surface detail is recessed, fast becoming a new standard for kits even in this scale. A nice boarding ladder is provided. The instructions, printed in English and Japanese, are easy to follow. The decals are a bit thick and provide markings for the second prototype and basic USAF insignias.

Overall, the fit of the parts is excellent, especially the wing-to-fuselage joint, but the intakes need careful fitting. The fuselage at the seam underneath the tail is slightly concave; I don't know if the aircraft is actually shaped this way. The scribing on

the barrier hook is extremely heavy. Installing part B-4 can be tricky; it has to drop into the aperture in the top of the nose after the fuselage halves have been joined. The molding of the gun barrels in B-4 is poor; instead of well-defined barrels there are simple bars projecting out of the gun troughs. The slots in the Sidewinder missiles are larger than the tabs on their pylons. Care is needed when aligning the canopy actuators (parts A-7 and A-8) so that the canopy attaches properly.

The instructions indicate that the two antenna blisters on the nose should come off; this is correct and shows how Hasegawa has attempted to keep on top of the changing details of a machine that has yet to see production. By the same token, I recommend modelers who strive for accuracy check their references for color schemes and weapon layout. This will become easier when (and if) the F-20 goes into service.

The kit scales perfectly with information I found in a Northrop brochure. I only spent three hours on the model because there were few parts and no filling was necessary. It's a perfect out-of-the-box model to change the pace from conversions and superdetailed projects. I recommend it to modelers of any skill level.

*Phillip Friddell*

**FSM**

## WHALEBACK

Detailed Scale Model

for information write

**HERITAGE SHIPBUILDERS**

Box 494 • Lathrup Village, Mich. 48076

One of the largest selections of plastic kits in the state with over 2000 square feet of aircraft, cars, trucks, and military models.

Plus one of the largest selections of die cast vehicles anywhere.

Open every night til 8 p.m.

Master Charge/Visa accepted.

"You'll love the prices, too!"

**HAROLD'S PLACE, INC.**  
522 Chestnut St., Lynn,  
MA 01904

## Museum Quality Miniatures



Creators of historical miniatures for museums and collectors for over 30 years. Look for our "Ragtag Drummerboy" at your local hobby supplier. Our complete Catalog 155, fully illustrated with photos of our 54 mm and 76 mm kits, is available direct from us for \$3.00.

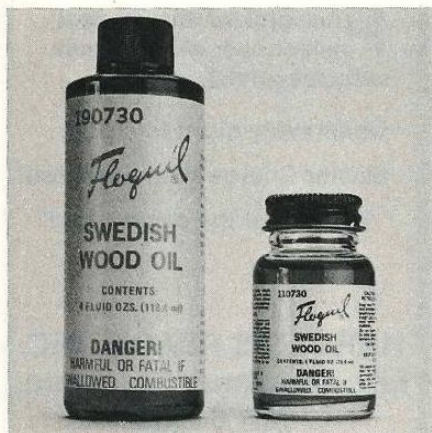
**I/R MINIATURES, INC.**  
P.O. BOX 89, Dept. M  
Burnt Hills, NY 12027, U.S.A.



FSM invites manufacturers, importers, and distributors to submit product samples. Information on new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

FSM readers should check their local hobby shops for the items in this column before writing directly to the manufacturers.

FINESCALE MODELER staff photos by  
A. L. Schmidt and Paul A. Erler



## Wood finish

Floquil-Polly S Color Corporation, Route 30 North, Amsterdam, NY 12010-9204, has added Swedish Wood Oil to its line. It is a one-step sealer-finish for wood surfaces. A 1-ounce bottle sells for \$1.39, while a 4-ounce bottle sells for \$3.49.

## 90 mm figures

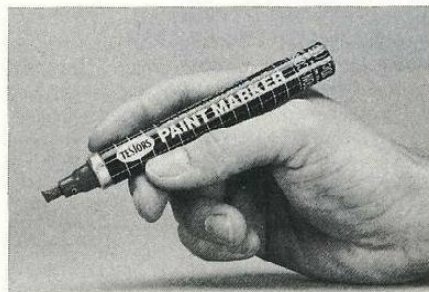
Recent releases in "The Americans" series of 90 mm metal figures from Series 77 Miniatures, 7861 Alabama Avenue, No. 14, Canoga Park, CA 91304, are (from left, below) No. A/40, Lance Rimmer, bounty hunter, 1880; A/39, Young Eagle, Plains Indian, 1870-1880; A/42, Running Buffalo, Plains Indian, 1870-1880; and A/41, G. Eugene Boone, U. S. Navy seaman, 1941-1945. Numbers A/39, A/40, and A/42 sell for \$22.95 each; A/41 is \$25.95.



## HO scale diorama materials

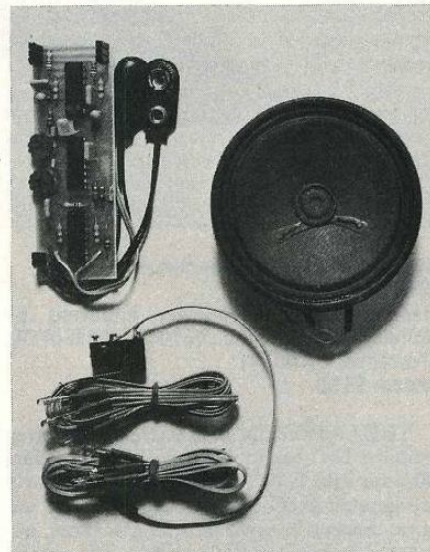
Available from Chooch Enterprises, Inc., P. O. Box 217, Redmond, WA 98052, is a line of HO (1/87) scale scenery accessories. In the top row, from left, are No. 7109, milk cans; No. 7115, acetylene welding tanks and cart; No. 7113, drinking fountains; No. 7111, early air compressors; No. 7126, 15-, 30-, and 50-gallon drums; No. 7108, Coca-

Cola "button signs" for structures; and No. 7110, auto tires. From left in the bottom row are No. 7121, electrical power meters; No. 7114, Fairbanks Morse portable scales; No. 7117, exterior plumbing pipes; No. 7120, 7' chimney with tapered flue; No. 7105, early gas pumps; and No. 7100, open-top Coca-Cola machines. Each package is \$3.00 except for No. 7100, \$4.00, and No. 7115, \$2.99.



## Paint marker

The Testor Corporation, 620 Buckbee Street, Rockford, IL 61108-4891, has introduced a line of high-gloss enamel paint markers. Each marker comes in a 1/8-ounce tube with a color-coded cap and retails for \$1.98; 12 colors are available.



## Electronic machine gun simulator

The Gunner's Mate is an electronic machine gun simulator suitable for radio control or display model aircraft, boats, or tanks. It is powered by two 9-volt alkaline or nicad batteries. Sound is provided through a 3" round speaker and the output is rated at 8 watts. The Gunner's Mate consists of an electronic circuit board, speaker, battery clips, microswitch, and LEDs for a six-gun configuration. Both firing rate and ricochet tone are adjustable. New Horizon Designs Co., P. O. Box 788, Camas, WA 98607, sells the Gunner's Mate for \$44.95 postpaid; send a stamped, self-addressed envelope for more information.





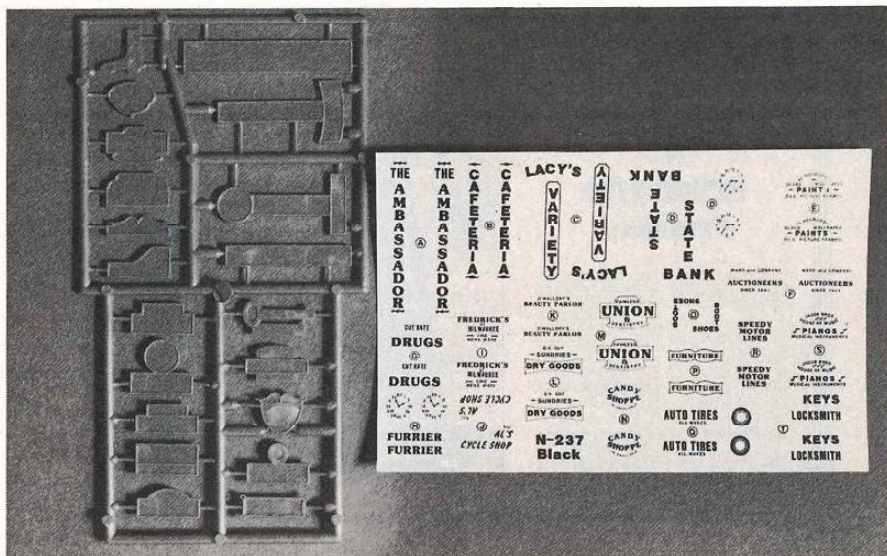
### Aspen tree kit

Enough material to create approximately 20 trees is included in this Aspen tree kit from Crummy Products, P. O. Box 112, Bel-laire, TX 77401-0112. The kit, product No. 105, comes with assembly instructions and painting tips. It sells for \$8.95; add \$2.00 for shipping if ordering from Crummy Prod-ucts. The firm's catalog sells for 50 cents.



### Super glue

Bostik Consumer Division, Emhart Cor-poration, P. O. Box 3716, Reading, PA 19605, produces Success II super glue, a cyanoacrylate adhesive designed for use on po-rous and nonporous materials. A 2-gram tube (.07 ounces) is priced at \$1.29.



### Sign kit

This 1/87 scale sign kit from Wm. K. Wal-thers Inc., 5601 West Florist Avenue, Mil-waukee, WI 53218, includes a sign sprue, black sign decal sheet, and white window decal sheet. It is product No. 941-1370 and sells for \$4.95.

### 54 mm figures

New from Miniaturas Andrea, Matías Turrión, 14, 2° C, 28043 Madrid, Spain, are two 54 mm metal figures. At left is a World War One Prussian hussar officer, while at right is a French chasseur officer. Each figure comes with a wooden base, as well as a painting guide and assembly instructions in English. The price is 725 pesetas each (ap-proximately \$4.30), plus 15 percent for post-age within Europe and 35 percent for post-age to the U. S.

FSM

### QUALITY 35mm AVIATION TRANSPARENCIES



including:  
military, civilian, homebuilt, antique, and museum/display

### AVIATION PHOTOGRAPHICS

P.O. BOX 717 DEPT. FS  
CHESAPEAKE BEACH, MD.  
20732 USA

Send \$100 for  
current list  
and sample slide

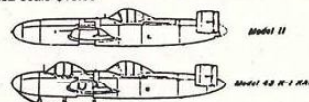
### arru-scale DECALS: PLUS



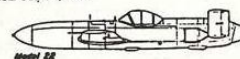
ACCU-SCALE  
3 Clayton Ave.  
Bedford, Pa. 02155

### VACUFORM KITS:

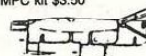
VJ-1 OHKA Model 11/43;  
1:32 scale \$10.00



VJ-2 OHKA Model 22;  
1:32 scale \$7.50



CG-1 FW 190 13mm cowl;  
for 1:24 MPC kit \$3.50



CA-1 V-100 turret  
for M-113; 1:35 scale  
\$3.50

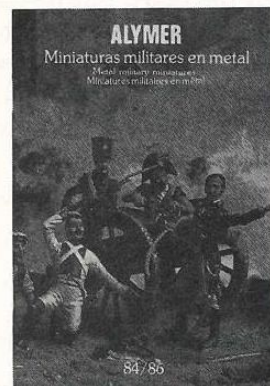


### DECALS: Still available;

AD-1 U.S. letters & numbers; \$12.50 / set  
AD-2 LUFTWAFFE letters & numbers; 1:32 \$17.50 / set  
AD-3 Same as AD-2 only 1:48; \$17.50 / set

Please add 20% shipping & handling  
Mass. residents add 5% sales tax

## MILITARY MINIATURES BY ALYMER



This 58 page catalog features full color pictures of over 900 different foot and mounted figures from Egyptian Pharaohs to Ronald Reagan.

Also featured are chariots, wagons and artillery pieces.

### ALYMER

Over 40 years of fine European craftsmanship.

For this classy catalog, please send \$5.00 (credited to first \$50.00 order) to:

**Brian K. Mitchell**  
P.O. Box 52414  
Livonia, MI 48152

DEALER INQUIRIES INVITED

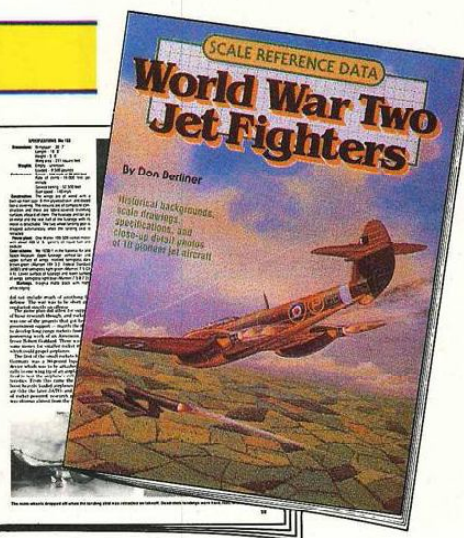
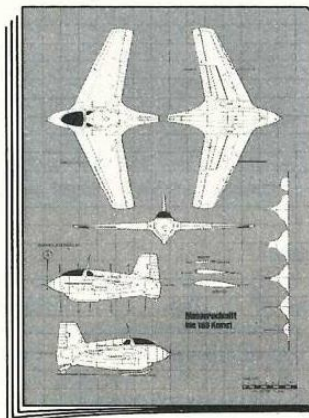




# These books — from the publishers of FINESCALE MODELER — will answer your scale modeling questions!

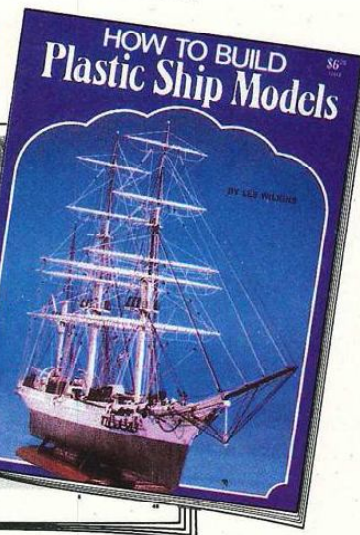
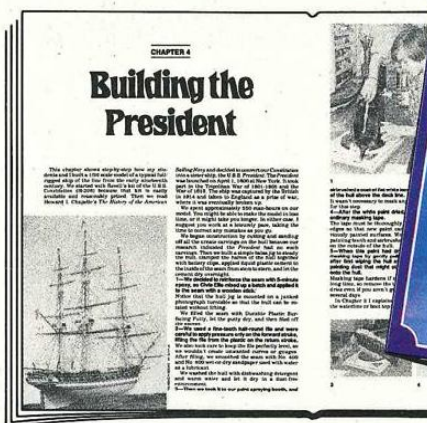
## WORLD WAR TWO JET FIGHTERS

Here's the kind of reference data you need most for modeling — and have the most trouble finding. In 72 pages, you'll discover invaluable information (including accurate 1/72 scale drawings) on 10 pioneer jet aircraft. Aircraft included range from the Bell XP-59A Airacomet and Lockheed P-80 Shooting Star to the Gloster Meteor, Messerschmitt Me 163 Komet, and Nakajima Kikka! \$8.50



## HOW TO BUILD PLASTIC SHIP MODELS

You'll learn how to build accurate ship models from plastic kits with this handy 64-page book as your guide. Author Les Wilkins has written the book so that beginners will achieve good results from the start, but has also included tips for the veteran modeler. Sailing and steel ships are covered, and this well-illustrated book includes a step-by-step guide for constructing the U. S. S. *President*! \$6.25



Buy these books at your hobby shop or order direct today!

DEPT. 3869, KALMBACH BOOKS, 1027 N. Seventh St., Milwaukee, WI 53233

QUANTITY	TITLE	PRICE
—	Building Plastic Models .....	\$4.75
—	Famous Spaceships of Fact and Fantasy .....	\$8.50
—	Hints and Tips for Plastic Modeling .....	\$3.95
—	How to Build Dioramas .....	\$8.95
—	How to Build Plastic Ship Models .....	\$6.25
—	Modeling Tanks and Military Vehicles .....	\$8.95
—	Building and Improving Vacuum-Formed Model Aircraft .....	\$6.95
—	World War Two Jet Fighters .....	\$8.50
—	How to Photograph Scale Models .....	\$8.95
—	Building Model Airliners .....	\$6.95
—	<b>Subtotal</b> .....	

Please send me the books I've marked.

- ☐ My check is enclosed  
☐ This is a credit card purchase (see below)

**Subtotal** \_\_\_\_\_

Postage and handling: U. S., \$1; foreign \$1.50 (per order); Wisconsin residents add 5 per cent sales tax

**TOTAL** \_\_\_\_\_

If you don't wish to clip your magazine, copy the necessary information including department number on a separate sheet. Prices subject to change.  
 ©1985 KALMBACH PUBLISHING CO.

Name \_\_\_\_\_  
 Street \_\_\_\_\_  
 City \_\_\_\_\_  
 State, Zip \_\_\_\_\_

☐ MASTERCARD  
 Charge to: ☐ VISA Exp. Date \_\_\_\_\_  
 Card Number \_\_\_\_\_  
 Signature \_\_\_\_\_





## FROM THE EDITOR

# Just for fun

THIS HOBBY OF SCALE MODELING is supposed to be just for fun, but sometimes it seems as if that isn't so. Instead of a refuge from the demands that affect every other aspect of our lives, this pastime gets twisted around into yet another must-do activity — and the fun disappears.

Why, and more important, how do we get the enjoyment back? My guess is that the hobby becomes a lot less relaxing whenever we, as modelers, begin to set goals for ourselves. The goals aren't always related to competition; they can be as "harmless" as deciding to add all details visible in your references to an already-good kit, or trying to finish your current project in time for a club meeting or shopping mall show.

The trouble is that by setting goals we allow the pressure to accomplish them to creep into what should by rights be a no-pressure activity. (Part of the appeal of any hobby, after all, is that you don't *have* to do it.) And when the self-imposed pressure overpowers the enjoyment of building, the project grinds to a halt.

Sound familiar? Got a dozen or more ambitious, half-completed models scattered around your workbench, each of them exactly at the point where the fun evaporated? Try this: Go to your local hobby shop and buy an inexpensive kit outside your main area of interest. Take the box home, put the model together (no extra parts, no putty), paint it, and add the markings that came in the box, all in one evening. If it works, try it again.

Just for fun.

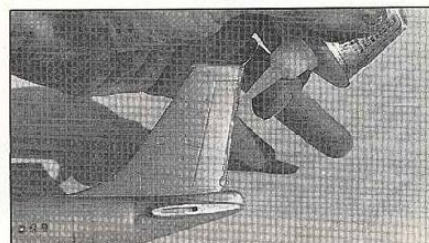
*Bob Haydel*

Editor

FineScale  
**MODELER**

# NEXT ISSUE

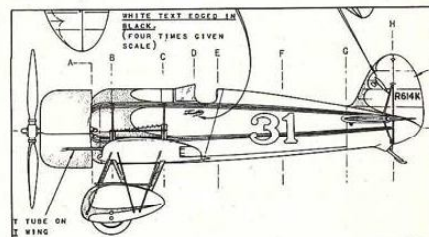
## FEATURES



About cyanoacrylate "super glues." Lloyd S. Jones.

Headlining May/June FSM are two more of the technique articles that have proven tops with FSM readers, the first on the cyanoacrylate "super glues" that have revolutionized the way many modelers build. Author Lloyd S. Jones shows how to use these miracle adhesives, including some truly ingenious applications! And a second new material comes into the spotlight as H. Scott Edwards explains techniques for building your first epoxy resin aircraft kit!

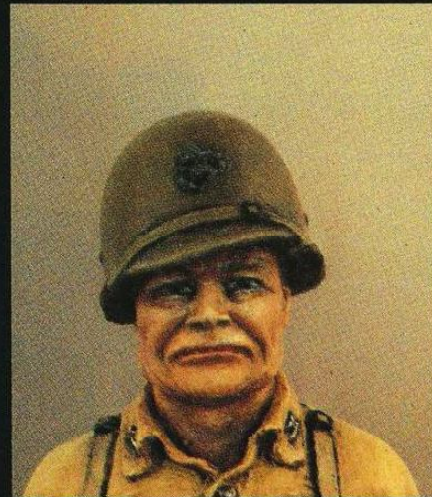
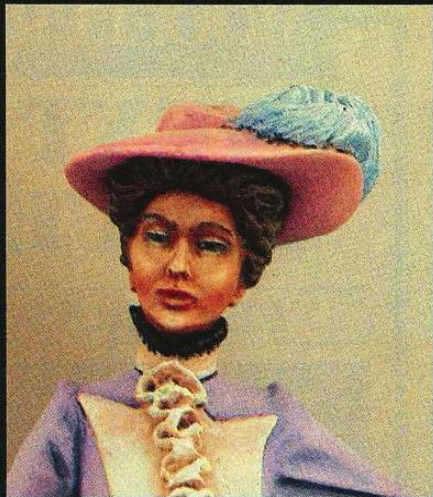
## DATA/DRAWINGS



1929 Travel Air Model R "Mystery Ship." B. Karlstrom  
Ever wondered what all those "PaK" and "PzKpfw" and "SdKfz" German military vehicle designations mean? Expert Bruce Culver turns interpreter in our next issue and translates the common — and some uncommon — German terms and their abbreviations. Fans of the golden age of aviation will find drawings of the 1929 Travel Air Model R "Mystery Ship," along with Roscoe Creed's article on building a replica of the racer in 1/48 scale.

**ALL IN  
MAY/  
JUNE  
FSM!**





# Painting faces in artist's oils

Step-by-step techniques you can apply to any figure in any scale

BY GEORGE DEWOLFE

**P**AINTING FACES is more interesting — and more important — than any other aspect of figure modeling. The reason is simple: The life and character of the figure radiate from the face. But painting faces isn't easy — for a couple of good reasons. First, human anatomy is extremely complex, even on its surface level, and that complexity is compounded by miniaturization. On top of that, mixing oil colors, then highlighting and shading and blending with them, bedevils modelers into screaming "Uncle" before they are barely off the ground. They needn't, and I hope to show you why.

Before discussing technique I want to emphasize that you can't approach painting faces solely from the standpoint of painting technique. More important than skill with a brush is the earnest desire to create (with paint) the *character* of a real person in miniature. I can't emphasize this enough: If you don't have this desire you'll have a hard time painting figures well, no matter how many techniques you employ. I liken this to the famous children's story, *Pinocchio*, where the toy-maker Geppetto wanted to make a wood puppet into a real boy. In painting faces there is a point where, suddenly, the figure seems to leap into reality — I call this phenomenon the "Pinocchio effect."

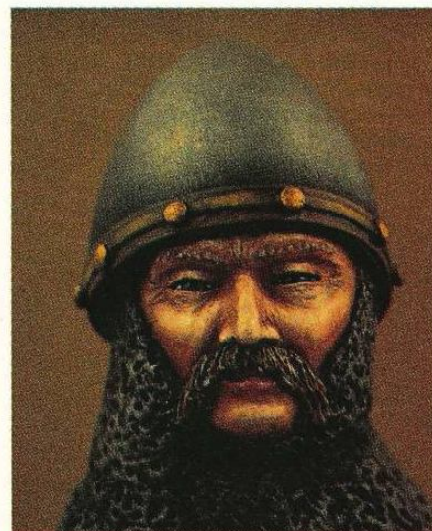
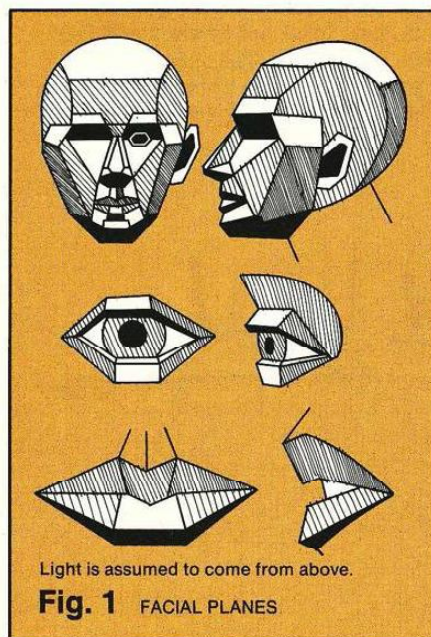
**Breaking the face into planes.** It's easier to understand face painting if

you first break down the seemingly homogeneous and smoothly contoured human head into planes, Fig. 1. Each plane has a specific type of highlight or shading — for example, the plane of the upper cheek is extremely light compared to the area directly beneath the nose. By understanding the planes you can begin to develop a "feel" for which parts of the face should be light and which should be dark.

Note that the light on this ideal head is from above. Unless there's an aw-

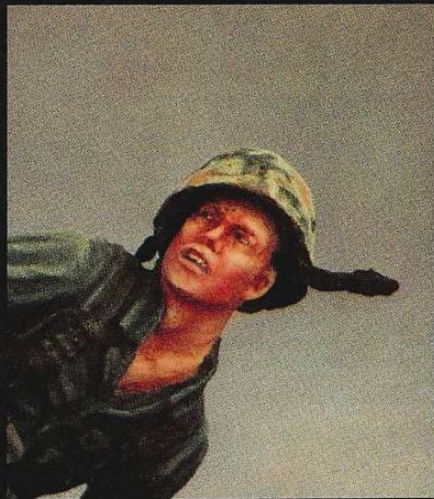
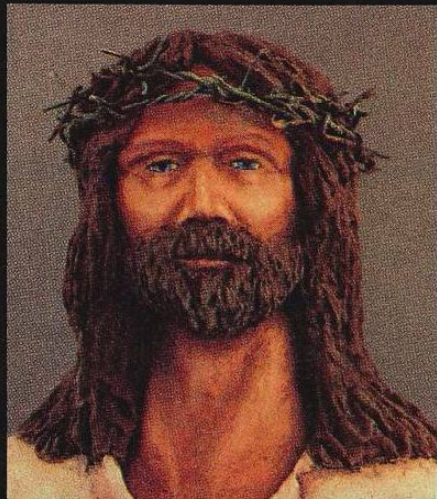
fully good reason to do otherwise, you can assume that the light always comes from overhead, like light coming from the "dome" of the open sky. Figures painted this way will be more realistic and natural.

Light from above striking the chiseled planes of the "ideal" face establishes the highlighting and shading pattern to follow when you apply paint to a figure's face. Once you've grasped the concept of the planes, you need make only a minor leap of imagination



**Fig. 2.** Note how the shading around the eyes, nose, and cheeks of this 100 mm knight provides most of the facial expression and character.





The facial expression is what establishes the character of each of these figures. The author painted all of them with artist's oils using the undercoating, highlighting, shading, and blending techniques described in this article.

from this "plane" face to the normal human head, meanwhile keeping the idea of facial planes intact.

**Three kinds of shadows.** When light strikes the head it causes three types of shadows. The first kind are on the planes themselves, and where they intersect. These plane shadows are like the dark portions of our sketches showing the head and eye, but they change from head to head. (The differences in these plane shadows are slight between men and women, but considerable between races.)

The second kind of shadow is the wrinkle. These small, but very dark, shadows are independent of the plane shadows and are unique to each figure. They include dimples, the crow's-feet around the eyes, and laugh lines, Fig. 2. The third kind is the local shadow. These are caused neither by facial

planes nor by wrinkles, but by clothing items such as a hat brim casting a deep shadow on the upper forehead.

Keep these three different types of shadows in mind when you paint faces. Usually, you'll want to start with a broad application of paint to render the planes of the face, then concentrate on specific wrinkles, then add local shadows and details.

**Brushes and equipment.** Every figure modeler has his own favorite tools and paints. Brushes in particular are highly personal pieces of equipment (I know a modeling couple with "his" and "hers" sets of brushes — both locked up separately). Choose your brushes for the quality of the point and for durability, and don't ever use them for anything but figure painting.

I paint faces with Winsor & Newton Series 7 red sable brushes, and I con-

sider them the finest figure painting brushes available. Buy a No. 000 for detailing, a No. 0 for medium work and blending, and a No. 1 or No. 2 for general painting. A Winsor & Newton Series 12 brush is good for blending, and the Series 52 flat shape is good for dry-brushing and applying paint to large areas. The Grumbacher No. 7805 Cat's Tongue is also excellent for this purpose. I've also found Teka Fine Line brushes of very high quality.

A binocular magnifier that fits over your head such as the Optivisor\* is a necessity for painting faces. You will get eyestrain and headaches if you do not use one. I have 2x, 3x, and 4x attachments for mine, Fig. 3.

Almost anything can serve as a pal-

\*Donegan Optical Co., 1405 Kansas Avenue, Kansas City, MO 64127.



Figs. 3 and 4. (Right) The author's workbench, with a figure in progress. George rates the Optivisor binocular magnifier among his most important tools. (Above) Supplies, clockwise from top, Winsor & Newton thinner, Grumbacher linseed oil, Pactra Namel thinner, Grumbacher Oil Painting Medium No. 1, and Winsor & Newton Artist's Oils.







A



B



C



E



F



G

ette for mixing paints, from newspaper to index cards to glass plates. I use plastic-coated freezer paper because it is inexpensive, clean, and disposable. Round toothpicks are useful for mixing paint, although many painters use a palette knife. You'll also need plenty of tissue paper or rags for wiping and cleaning brushes.

**Paint, thinner, and additives.** Nothing but the best will suffice for painting faces, and for me that's Winsor & Newton Artist's Oils (the high-quality line,

not the London oil colors), Fig. 4. Most other oil paints I have tried have too much oil in them to be useful for painting faces, but figure painters disagree almost violently about paint. One of the best painters I know uses Grumbacher Finest Oils, and most painters use at least a few specific colors from various manufacturers other than their first choice. Winsor & Newton oils, however, seem to be ground finer and blend better than the others. Figure 5 lists the oil colors you'll need for painting faces, as well as several water-base Polly S colors for undercoating and painting eyeballs.

Many painters use pure gum spirits of turpentine as a thinner and brush cleaner for oils, but the smell drives me crazy! I prefer either Pactra 'Namel thinner or Winsor & Newton mineral spirits, which is odorless and available in pint containers at a considerable savings over smaller sizes. A favorite of others is Grumbacher Oil Painting Medium No. 1, which imparts a flat finish to oils, but I find its smell, too, obnoxious.

When used as a painting medium linseed oil renders oils glossy. I use it mainly to slightly moisten and "point" the brush just before blending. Poppy seed oil is generally better for flesh tones as it does not yellow pale colors. Cobalt Drier accelerates the drying of oils — a tiny drop from the point of a toothpick into a pea-sized blob of paint will make it dry in 12 to 18 hours.

Many figure painters use Dorland's Wax Medium\* to impart a flat finish to oil paint. The proportions vary with each color, but about one-third Dorland's to two-thirds paint will do for starters. Most of the time, mixing thinner with oils yields an acceptably flat finish, but you'll have to experiment to see what works for you.

**Priming and undercoating.** Priming is an important step in figure painting. The primer reveals flaws in sculpting and assembly and serves as a base for the undercoat colors. For metal figures it acts as a barrier to prevent oxidation, which causes a white powder known as "lead disease," ruining the figure.

Metal should be primed with either Imrie/Risley Primer or Floquil Spray Figure Primer. After this protective coat I airbrush the figure with Floquil Primer (RR9) or Floquil Reefer White (RR11). Either serves as a "toothed base" (a paint surface rough enough to hold other paint) for the undercoat. I airbrush plastic figures with Floquil Reefer White or flat white enamel.

Undercoating simply means laying down a coat of paint without highlighting or shading, A (see box, top of this page). For the face I use Polly S Desert Pink (PCA810) for men and Cherry Pink (PF22) for women. Polly S won't rub off when you add highlights and shadows with oils; enamels such as

#### OILS

Titanium White  
Terra Rosa  
Burnt Umber  
Permanent Magenta (Quinacridone)  
Naples Yellow or Jaune Brilliant (I prefer the latter)  
Yellow Ochre  
Alizarin Crimson  
Mars Violet  
Mars Red  
Mars Orange  
Brown Madder Alizarin  
Flesh Tint  
Payne's Gray

#### POLLY S COLORS

Desert Pink (basic undercoat flesh color for men)  
Cherry Pink (for women)  
Dirty White  
Night Black  
Ogre Dark Brown  
Dragon Blue

**Fig. 5** COLORS FOR PAINTING FACES

\*Dorland's Wax Medium, Siphon Art, 74-D Hamilton Drive, Ignacio, CA 94947.





D

## PAINTING A FACE STEP BY STEP

(A) A Series 77 90 mm pilot after the figure has been primed, then undercoated with Polly S acrylic colors. (B) The eyeballs have been painted, and the flesh areas around them touched up with the Polly S flesh color. (C) The figure after applying the first blend shadow and highlight colors, and (D) after blending them. (E) The second blend shadows and highlights applied, and (F) blended. (G) The face after the finishing blend, with all wrinkles and detail shadows added, and extra color worked in to give the figure life.



Even these 1/76 scale desert rats show lots of character. The eyes are mere black slits, but the lower eyelids have been suggested with paint to give form to the eyes.

Humbrol and Pactra would wear off during blending.

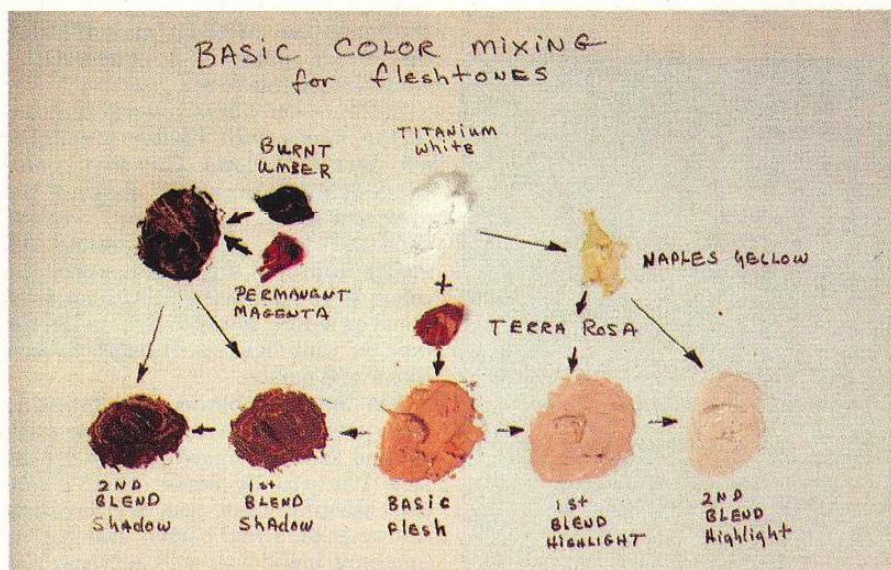
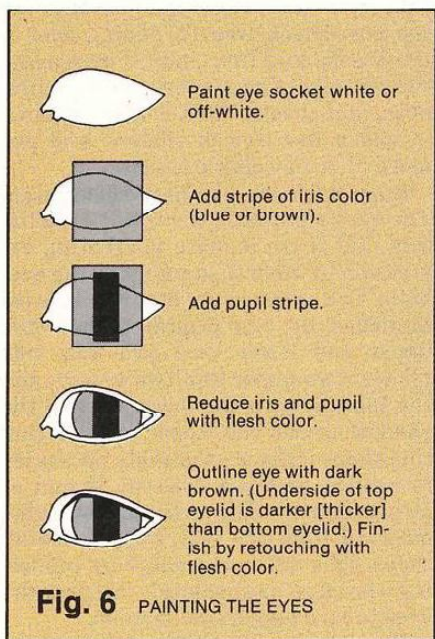
**First: eyeballs.** Paint the eyeballs first: Doing so begins to establish the figure's character. Use Polly S so that once the eyeballs are painted on they cannot be changed by accidental smearing. If oil paint happens to cover them during blending, a brush dampened with thinner will remove the errant color and leave the eyeball clean and intact.

Paint the whites of the eyes first with Polly S Dirty White (PCA805), Fig. 6. Next, using either Ogre Dark Brown (1427) or Dragon Blue (1432), add a line covering the middle half of the eye; this will become the iris. Don't worry about the color overlapping the top and bottom eyelids; you'll go over this later. Next add a black line inside the iris to represent the pupil.

Now reduce any of the lines outside the eyeball with the basic Polly S flesh

color, outline the inside of the eyelid with dark brown, touch up, and you're done, B. It takes practice to get this right, but after just a few figures you'll feel confident. And don't forget to use that binocular magnifier!

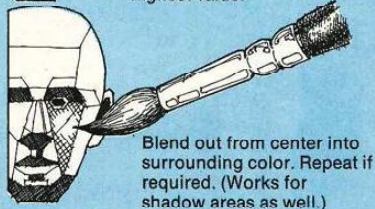
**Mixing flesh colors in oils.** Before you apply oils over the Polly S to establish planes and wrinkles you must learn to mix a basic flesh tone and highlight and shadow tones based on it. This is relatively easy.



**Fig. 7.** Here's how George recommends mixing a basic flesh tone from artist's oils, as well as variations of the basic tone for shading and highlighting.



# FIRST AND SECOND BLENDS – blending shadow into highlight

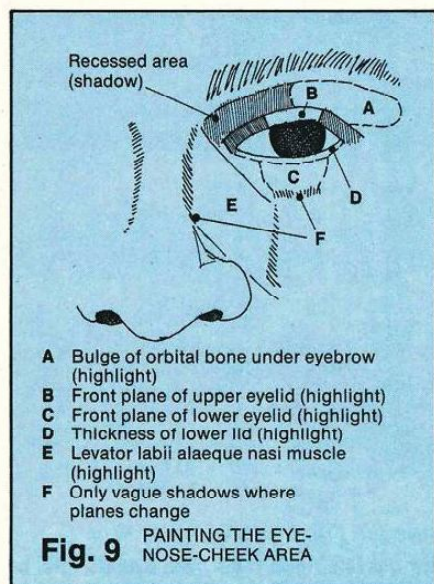


**Fig. 8** BLENDING TECHNIQUE

Start by mixing a basic medium flesh tone with Terra Rosa and Titanium White, Fig. 7. Use the back of your hand as a reference. Next add more white and a little Naples Yellow or Jaune Brilliant to make a medium highlight (I call this the "first blend highlight") and more white and Naples Yellow for the "second blend highlight."

For the shadow tones mix equal amounts of Burnt Umber and Permanent Magenta and add this to the basic flesh color to obtain a "first blend shadow" and "second blend shadow."

For women use Flesh Tint as your basic flesh color and add a little Alizarin Crimson to the shadows; everything else remains the same. For blacks use lots of Burnt Umber, for Indians substitute Indian Red for Terra Rosa,



**Fig. 9** PAINTING THE EYE-NOSE-CHEEK AREA

and for Orientals add yellow to the basic mixture.

**Shading, highlighting, and blending.** I break shading and highlighting into three steps: the first blend, second blend, and finishing blend. The first blend involves laying in and blending the planes of the face and local shadows, and the second is concerned with painting deep recesses and wrinkles and adding contrast. The finishing blend further increases general contrast, smooths tones between planes, and adds details and color.

Start the first blend by moistening your brush with thinner. Mix thinner into the first blend shadow color until it has the consistency of Polly S, perhaps a little thicker. Achieving the correct paint consistency is a matter of experience, and you'll have to experiment to find the consistency that will make the paint flow evenly and smoothly from the brush.

Apply the first blend shadow color, C, covering all medium shadow planes of the face. These include the side of the face, underneath the chin, the sides of the nose, the hairline, and under the lower lip. Leave out detail shadows, and don't do the eyes in this step. Use the paint sparingly — a little oil color goes a long way. Next apply the first blend highlight color to areas not covered by the shadow mix, then blend the shadow and highlight colors together.

Moisten the brush with linseed or poppy oil and wipe it off so that the brush is dry, but has a distinct point. Blend the area where the highlight and shadow meet so the transition is smooth, D. Use a delicate motion with the brush, generally in one direction, Fig. 8. If blending in one direction doesn't complete the job, go back and blend the other way. The photos are greatly enlarged to show what you'll see through the magnifier. Without magnification the brush marks and irregularities would be too fine to see.

In the second blend you add contrast to the figure with lighter highlights and darker shadows. This step is also when details such as the shape of the eyes and mouth and general recesses such as the laugh lines around the mouth and nose are added. Apply the colors as you did in the first blend, then blend as before, E and F. Gradually, the face on your figure will begin to look like a real person.

**The finishing blend.** This finishing step, needless to say, is the most critical and exacting phase of painting the face. It's actually made easier if you can imagine that you are creating character on a real person. During the finishing blend you will increase the contrast, smooth out lines between shadows and highlights, accentuate minute details, and add color.



## Meet George DeWolfe

George has been modeling since 1952, and says he remembers the day the Revell Sherman tank came out, his ninth birthday. "I was excited about building this kit — and the figures, especially the sculpted faces, are still pretty good, even by today's standards." He became interested in dioramas in 1956 when his family visited the Smithsonian and he viewed the magnificent examples on display there.

George holds a Master of Fine Arts degree from the Rochester Institute of Technology, and he taught college in the 1970s. He has won national awards for his work, and many of his figures and dioramas are in museums and private collections. He and his wife now produce figures and dioramas full time.

George serves as special projects director for IPMS/U. S. A., and has recently developed a special color wheel for determining highlights and shadows on figures and models. He, his wife Berni, and son Lucien live in Colorado Springs, Colorado.

Like the overall process of painting the face, I divide the finishing blend into three steps. They are: (1) creating character and expression around the eye-nose-cheek area, (2) adding color to the cheeks and lips, and (3) increasing the contrast of local areas like the chin, nose, and cheeks. This is also the time to add a five o'clock shadow and put more color in wrinkle creases.

Start with the eye-nose-cheek area. The eyes are indeed the windows of the soul, but there is more to creating expression in them than painting the eyeballs. The shape of the eye, Fig. 9, is established by two frontal planes (the upper and lower lids) and four side planes (two upper and two lower), and the highlight on the lower lid and the shadow under the upper lid. Getting this shape right is absolutely necessary to achieve realistic eyes on 54 mm or larger figures. The eyes do not bulge outward from the lids, but sit behind them. This effect is created by rendering the area immediately around the eyes in an exaggerated fashion.

Pay special attention to the high-



light areas around the eyes, painting them lighter than usual so that the planes and features seem to stick out more than normal. Use the paint as it comes from the tube, undiluted with thinner. Apply a speck of off-white paint about the size of the dot on an "i" made with a pen, then blend the speck outward into the small highlight area, for example, the upper eyelid. You may have to repeat this two or three times, and careful observation and evaluation of the effect is crucial.

Next add color to the cheeks and lips. Mix Alizarin Crimson with the basic flesh color to get a medium pink. Apply this to the hollows of the cheeks just below the cheekbone and to the lower lip. Use pure Alizarin Crimson or Permanent Magenta for the underside of the upper lip. Work the cheek color into the flesh tones. Add white to the front plane of the lower lip and blend with the pink. You may need to repeat this once or twice.

Step 3 involves increasing contrast. At this point, generally speaking, the overall appearance of the face is still flat. Increase the contrast by adding white or off-white (a little Naples Yellow or Yellow Ochre added to white will do). Add tiny specks of off-white to the tops of the cheeks, bridge of the nose and nostrils, top of the chin, and perhaps underneath the nose just above the lips. Blend the specks outward as before. Examine the figure under low, diffuse illumination (put your back to the light and hold the figure in your shadow). After this step the face should be just about right, G.

Sometimes the shadow recesses may seem dull because of too much Burnt Umber in the shadow mix. Pick up these areas by sparingly adding either Mars Orange or Mars Red and Brown Madder Alizarin, blending well. The area just under the eyebrows may need a touch of Mars Violet, but not too much, as this color is very powerful. Add a five o'clock shadow, if desired, by working a little Payne's Gray into the shadow areas of the cheek and mouth area.

**And now, practice.** After five or ten faces you should have the idea and be well on your way toward proficiency. Then you'll be able to concentrate on the subtle business of changing the character and expression from one face to the next. When you're ready, buy a good book on anatomy such as the one listed below, and study the elusive details and expressions of the human face. And may moss never grow on your paintbrush!

FSM

## REFERENCES

- Rubins, David K., *The Human Figure, an Anatomy for Artists*, Studio Publications, New York, 1953.

**L  
O  
G**

**LITTLE  
GENERALS**

## Canadian Mail Orders!

One of the largest selections of  
plastic models, books, decals and lead figures  
available in Canada

"Send your request or inquiries to our retail  
location with self-addressed stamped  
envelope"



No. 9 South Centre Mall,  
100 Anderson Rd. S.E.,  
Calgary, Alberta T2J 3V1  
Tel. (403) 271-0662.



# Lencraft

Our SPECIALTY is out of production & hard  
to find Aircraft-Ships-Armour-Decals

- |             |          |              |
|-------------|----------|--------------|
| • ITALERI   | • FROG   | • AIRFIX     |
| • MATCHBOX  | • NOVO   | • US AIRFIX  |
| • HAWK      | • ESCI   | • MPC AIRFIX |
| • VACUFORMS | • REVELL | • VEB        |
| • HASEGAWA  | • KP     | • HELLER     |

Free search service for those wanted kits.  
Monthly hot sheet mailing.

Send large SASE for list.  
P.O. Box 8010, CALABASAS, CA 91302-8010

## IF YOU THINK YOU CAN CUT CORNERS WITH AN OLD BLADE, PUT IT TO THE TEST.

Because your work demands tools of  
exacting and delicate precision, we  
make X-ACTO® knife blades both sharp  
and precise. But because our blades  
can't keep their accuracy forever, we  
also make them easily replaceable.

## THE X-ACTO TEST

A sharp X-ACTO blade will maneuver  
smoothly along the curves and corners  
of this dotted line, making the kind of  
clean cut you expect in your work. If,  
however, your blade drags, shreds, slips  
or catches somewhere along the line,  
then it's no longer giving you the pre-  
cision your work demands. In which case,  
it's time to replace your X-Acto blade  
with a fresh one.

When used properly,  
your X-Acto knife  
will become indis-  
pensable. But when  
used frequently,  
remember that the  
blade is disposable.



**X-ACTO®**  
CRAFT KNIFE BLADES

Put new life  
in your X-ACTO knife.

X-ACTO

©1984 Hunt/X-ACTO Inc. Div. Hunt Mfg. Co.  
1405 Locust St., Philadelphia, PA 19102





Fig. 1. This Revell 1/32 scale P-40 model by Charles Krause shows many of the techniques discussed in this article. Note elastic thread brake lines, flattened tires, stretched sprue sway braces for the external tank, and stretched sprue landing gear position indicator projecting from the top of the wing.

# Easy underwing details

## Getting to the bottom of aircraft models

BY RICHARD WEHR

**F**OR THOSE FORTUNATE enough to be able to peer at a microscopic blob of shapeless plastic and deftly turn it into a full working throttle linkage for a 1/32 scale P-40, I salute you. However, for the rest of us who peer long hours at the same shapeless blob of plastic and, after uttering many conjugations of four-letter words, turn it into yet another shapeless blob, take heart, there is hope. Here are a few tips for us sausage-fingered modelers to help improve our models.

Almost every aircraft kit has something that can be improved to gain visual interest. Simply building the kit with extended landing gear, long-range fuel tanks, and external ordnance attached to the wings and fuselage is a start, Fig. 1.

**Landing gear.** Let's look closely at landing gear struts. Many kits have

the oleo sections (the smooth, shiny, almost chrome-like area) molded fully extended, representing an aircraft in flight with the gear down. Photos of real aircraft show that the struts (much like large shock absorbers) are compressed significantly when the airplane is on the ground, Fig. 2. To simulate this, cut out a piece of the oleo section and reglue. Large-scale struts can be reinforced by placing a short length of stiff wire into holes drilled in each section of the strut. The torque link (the V-shaped piece that straddles the oleo section) may need to be modified as well.

Landing gear struts are rarely one color. Unpainted metal gear struts are made from several parts of assorted metals. These can be simulated by mixing black with silver to produce different shades. Even painted gear struts have unpainted oleo struts, nuts, and bolts. Sometimes different-colored land-

ing gear parts are replaced from other aircraft.

The only part of the landing gear that is chrome-like is the oleo strut. Wear marks and dirty hydraulic oil stains can be seen on oleos of real aircraft, but when scaled down they are nearly invisible. Either a bright silver paint or a small strip of aluminum foil can simulate the oleo section. The rest of the struts and wheels are generally dirty. Don't forget, the landing gear is closest to the ground, so the combination of dirt kicked up by the tires and leaking hydraulic fluid builds up soil quickly.

Some aircraft have landing gear position indicators in the wing that are visible from the cockpit. I make these indicators by drilling a small hole in the wing and inserting a red painted piece of stretched sprue for aircraft with the gear down, Fig. 1.

**Wheels and tires.** When an aircraft is on the ground the weight of the machine squashes the tires so that they appear flattened, Fig. 3. To achieve this effect in small scales, cut or sand off the bottom portion of the tires, Fig. 4. Larger scale tires are usually hollow and can be realistically bulged by pressing the tire against a hot iron, Fig. 5. Watch carefully as you do this to prevent distorting the tires. The final shaping of the bulge and the area that is in contact with the ground can be done with a file and sandpaper.

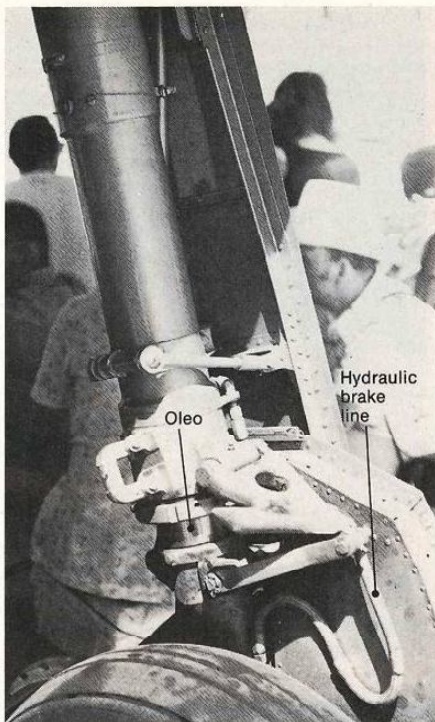
Mold lines should be removed from kit tires. Although some full-size tires are made in two-piece molds, the flash at the mold seam wears off quickly. Since tires aren't necessarily replaced in pairs, try sanding more tread off one tire to give it a more worn look, or paint one tire a slightly different color.

Don't paint tires black; dark gray is more accurate, and Pactra Hot Rod Primer, Floquil Grimy Black (R-13), or Testor Rubber (1183) is better. You can add weathering to tires too, especially on aircraft that operated from grass fields.

I usually add the wheels after the model is completed and the struts are attached to the aircraft. This way I can rotate the wheel until the flat portion of the tire makes contact with the ground. Then, I place a small drop of super glue on the axle and let it run into the mating surface of the wheel. Always check the tire's "sit" from the side and the front to be sure it is positioned properly.

Sometimes a mark is applied to the tire and wheel to make it easy to detect if the tire has slipped on the wheel, Fig. 6. A red decal cut into a small rectangle can be placed on the rim of the wheel where it meets the tire. Hydraulic brake lines can be added by waxing a





**Fig. 2.** Little of the chrome oleo section of the landing gear strut can be seen when the aircraft is on the ground. Note hydraulic brake line leading to the wheel.



**Fig. 6.** A small rectangular piece of tape is placed on the edge of the wheel and tire to detect slippage.

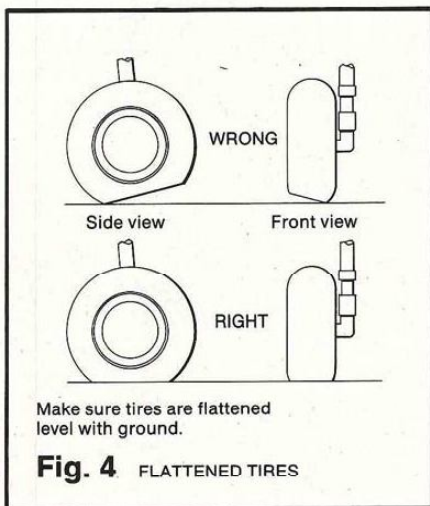
piece of thread and running it down the strut and into the wheel. I prefer elastic thread because it is pliable but holds sharp curves, and has a texture similar to real hydraulic cable, Fig. 7. Running the thread (elastic or regular) through a cake of beeswax eliminates fuzz and lint. Painted stretched sprue or wire-wrap wire can also be used for hydraulic lines.

**External fuel tanks.** This is easy. After painting the base color on the external tank, paint the area around the filler cap with light brown or gray to simulate overflow or spillage.

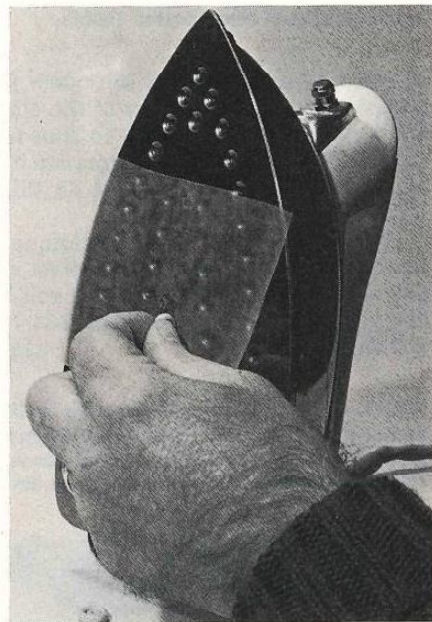
Since auxiliary fuel tanks were usually stacked in large numbers, and



**Fig. 3.** The weight of the aircraft flattens the tires. Model tires should be sanded, cut flat, or heated on an iron to simulate this. Note oil leaks on landing gear doors.



**Fig. 5.** Place waxed paper on warm iron to keep the kit tire from sticking. Inspect the tire occasionally to prevent distortion.



FINESCALE MODELER: A. L. Schmidt

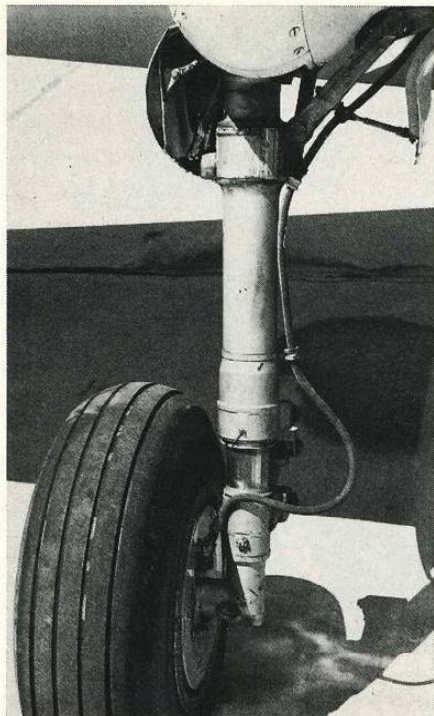
handled none too gently by ground personnel (when empty), dents and nicks are appropriate, Fig. 8. I make these by heating a nail and gently pressing it into the plastic. These are minor imperfections, not gaping holes. I make sway braces for bombs and external tanks from stretched sprue, Fig. 1.

**Weapons.** From dropped bricks in World War One to the sophisticated, laser-guided, heat-seeking, wire-guided, computer-controlled missiles of today, just about anything can be hung on an aircraft. The British used to transport urgently needed beer across the Channel in kegs or clean fuel tanks attached to the wing ordnance pylons, Fig. 9.

German fighters carried torpedoes and antitank rockets from half-tracks under their fighter aircraft.

You can make a few simple improvements to external ordnance. First, sand off all seams, file fin edges thin, and add any fin bracing detail which may have been left off the kit parts. Most bombs have a shackle bolt or two which can be added easily in large scales, Fig. 10. Most bombs have a fuse that is armed by a small propeller — a predetermined number of turns of the propeller arms the fuse. A wire attached to the pylon is run along the body of the bomb, Fig. 11, goes through a hole in one of the fuse prop blades, and is held



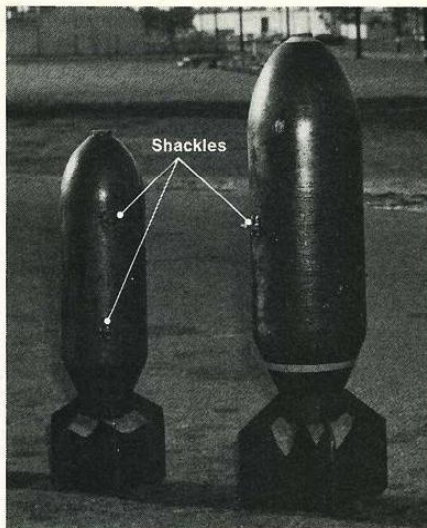


**Fig. 7.** Hydraulic brake line on a P-40. Note small amount of oleo section visible.

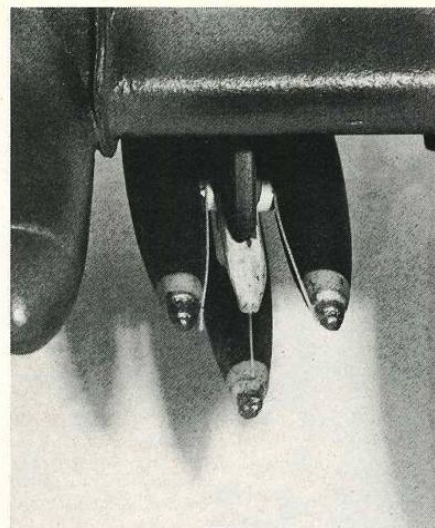
in place by a clip. When the bomb is dropped, the wire pulls out of the clip and hole allowing the prop to spin in the slipstream. These thin wires can be made with stretched sprue as on this 1/72 scale A-10, Fig. 12.

These relatively simple techniques can be used to add detail and interest to any model. With a little practice you'll find yourself building better models — and enjoying it more. **FSM**

**Fig. 11.** A 500-pound bomb attached to the center line of a P-40. Note sway braces, fuse arming wire, and nose and tail fuses. Two fuses decreased the chances of a dud.

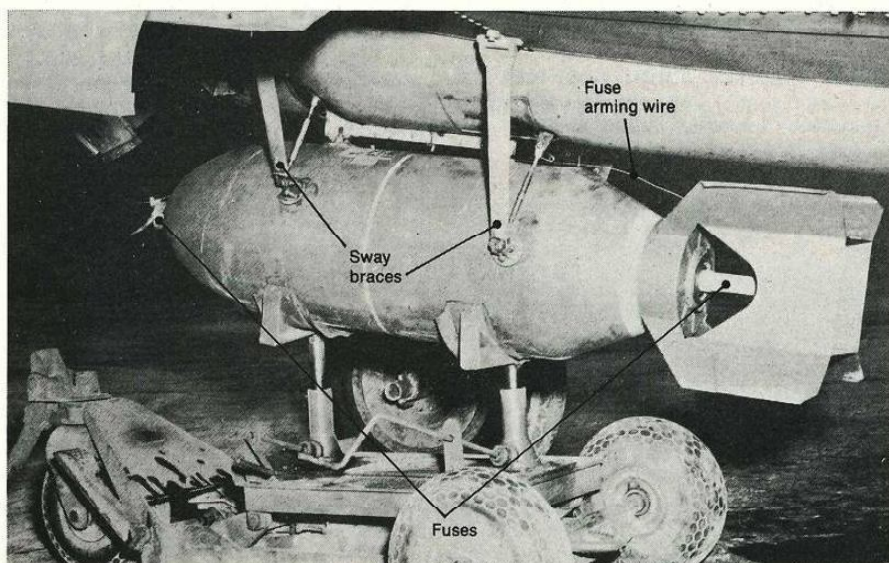


**Fig. 10.** These WWII-vintage bombs show two shackles (left) and a single shackle (right). The shackles attach the bomb to the pylon or bomb bay rack.



FINESCALE MODELER: Paul A. Erler

**Fig. 12.** Thin stretched sprue simulates fuse arming wires on this brace of 500-pound Mk. 82s on a 1/72 scale Monogram A-10 Thunderbolt II.



Aero Publishers



Courtesy Squadron/Signal Publications "Fw 190 in Action"

**Fig. 8.** The external tank on this Fw 190 has seen better days. Note dings and dents. Armorers are loading a 21 cm mortar round into a Wfr. Gr. 21 launch tube.



Aero Publishers

**Fig. 9.** Beer is loaded into a clean external tank for ferrying to troops across the Channel after the invasion.









Pat's 1/72 scale Heller T-28B Trojan features a vacuum-formed canopy he made on his homemade machine. Note male pattern on wooden pedestal.

## Stretch forming and vacuum forming in plastic

Making new parts is easy with these simple, homemade tools

BY PAT PERCIVAL

AT SOME POINT every modeler gets tired of building projects straight out of the box and begins to look around for new worlds to conquer. Some superdetail existing kits, others modify kits into lesser-known variants, and a select few even build models for which no kit is made. Following any of these paths is going to require fabricating many parts that cannot be found in anyone's spare parts box.

Two easy ways to make custom parts are stretch forming and vacuum form-

ing from plastic sheet. These methods are not mysterious or complicated, but are quick, easy, and add a lot of flexibility to your modeling skills. If you are one of the lucky few who owns a discontinued Mattel Vac-U-Form machine, you've known this for years. For those who don't, read on.

Stretch forming and vacuum forming are similar; a sheet of plastic is softened by moderate heat and formed over or into a mold. When the plastic cools and hardens it is removed from the mold. The excess plastic is then cut away, leaving a well-formed copy.

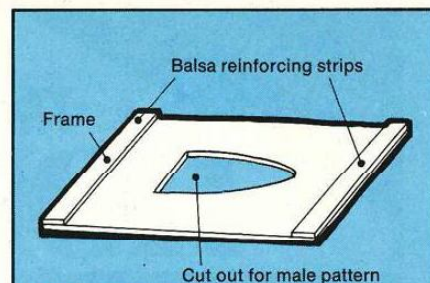


Fig. 1

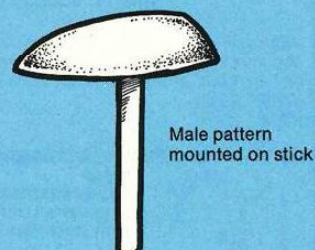


Fig. 2

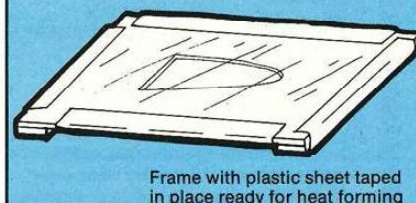


Fig. 3

Canopies and windshields are the most common subjects that modelers replace; some kit canopies are too thick, and a stretch- or vacuum-formed copy is easier to cut open to show detailed interiors. Fortunately, our radio control modeler brethren fabricate a lot of their canopies too, so hobby shops have a good supply of clear plastic sheets in a variety of thicknesses.

The thickness of the plastic depends on the size and application of the part that you're forming. Sheet styrene .010" or .020" thick is ideal for 1/72 scale canopies or air scoops, while .060" sheet would be used for such parts as cowls. A good variety of clear sheet plastic is distributed by Sig. A pack of assorted thicknesses of white sheet styrene is available from Squadron Mail Order.

**Different methods.** We're going to discuss two methods of copying parts: stretch forming and vacuum forming. Common to both methods is a male pattern over which the plastic is formed. Needless to say, the quality of the part you end up with depends on the quality of the original pattern.

For most aircraft the kit canopy can serve as the male pattern for the copy. I



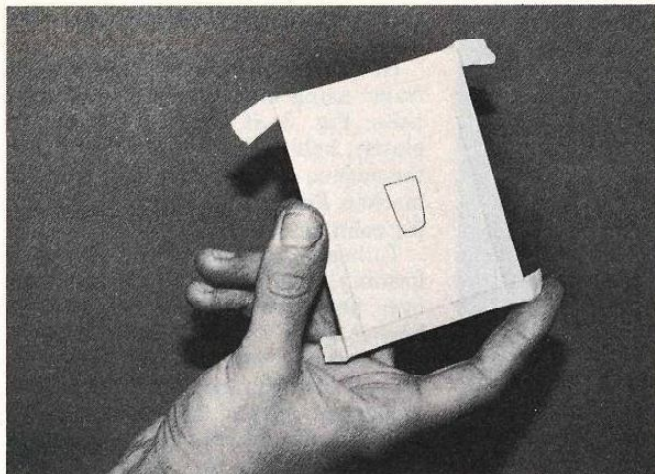


Fig. 4. An aiming point for the insertion of the male pattern is drawn on the plastic with a pencil or marker.

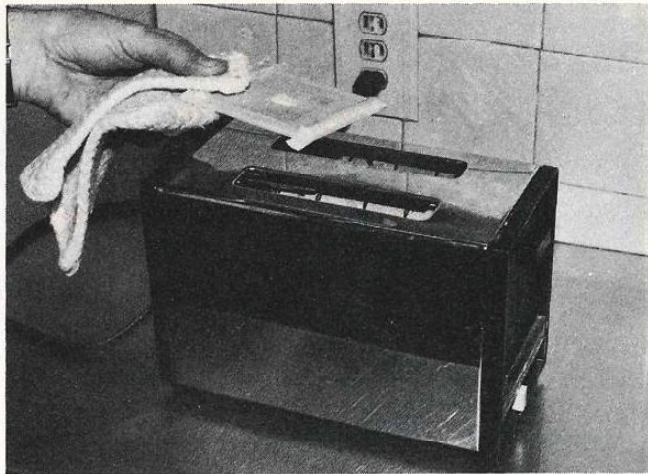


Fig. 5. Pat uses a toaster to heat the plastic in the frame. Note hot pads to protect fingers.

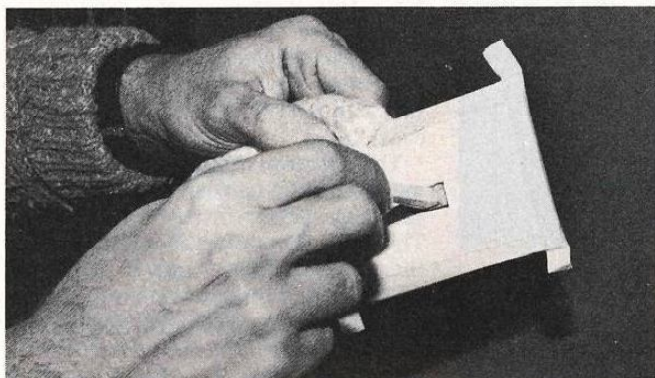


Fig. 6. The male pattern is pushed into the heated plastic.

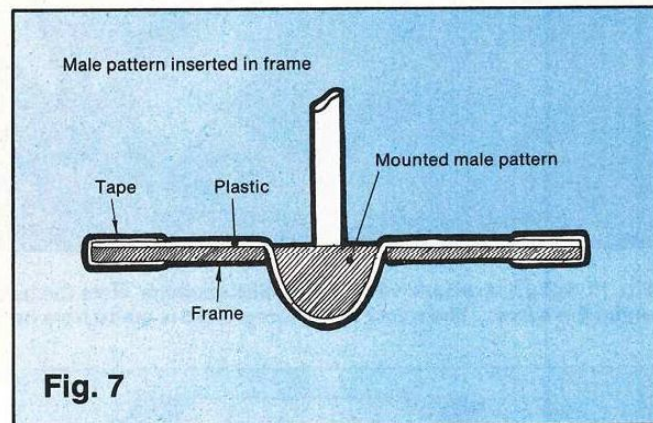


Fig. 7

reinforce my kit canopies with filled epoxy to keep heat from distorting them during the forming process. Although many good filled epoxies are available, I prefer to make my own from HobbyPoxy 2 and K&B Micro-balloons. This gives me greater control over the density so I can tailor it to different applications. Both materials are available at hobby shops that cater to flying airplane modelers. I remove the canopy framing with 600-grit wet or dry sandpaper to make a cleaner pattern. Framing is easily added to the copy later using paint, tape, or foil.

If you're scratchbuilding or modifying kits, a male pattern can be made from balsa. Shape the pattern with 220-grit sandpaper, test fit often, and sand again with 400-grit. Remember to make the pattern just a trifle small to allow for the thickness of the plastic to be formed over it.

If I need to add putty I first rub super glue onto the surface of the balsa male pattern. (I prefer Elmer's Wonder Bond.) Balsa is much softer than putty; a coat of super glue over the balsa makes it nearly as hard as putty, preventing uneven sanding. (Keep plenty of super glue remover handy when doing this.)

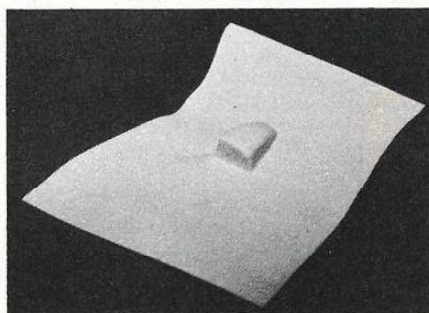


Fig. 8. A stretch-formed air scoop in the middle of a sheet of .020" styrene.

After the super glue dries, sand the pattern with 400-grit sandpaper, apply a coat of putty — I use Squadron Green Putty — let it dry, and give the pattern a final once over with 400-grit sandpaper.

Stretch forming is the simplest method of producing parts — no vacuum is needed. It involves a male pattern (which we just made), and a frame made from  $\frac{1}{16}$ " or  $\frac{1}{8}$ " balsa sheet, depending on the size of the part to be molded. The frame supports the plastic and ensures that it conforms to the sides of the pattern. Cut a piece of balsa

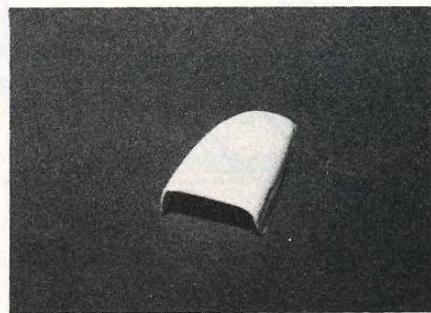


Fig. 9. The finished air scoop is carefully cut out of the sheet, filed, and sanded to shape.

sheet an inch or two wider and longer than the male pattern. Trace the pattern on this sheet and cut out an aperture with a knife. Make sure the male pattern can pass easily through the aperture with about  $\frac{1}{32}$ " clearance on all sides. Glue two balsa braces across the grain on one side of the frame, Fig. 1. These add strength since the frame undergoes considerable stress.

The male pattern now has to be mounted on a stick, Fig. 2, so that it can be pushed into the heated plastic without burning your fingers. I use 3M's quick-setting epoxy to attach the



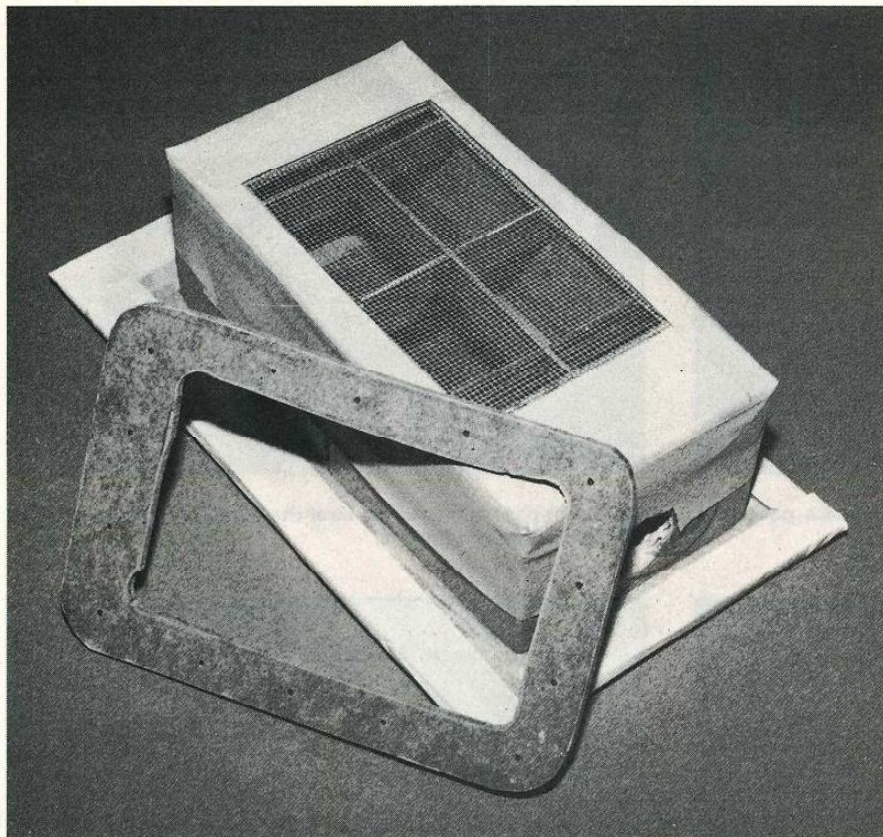


Fig. 10. Pat's homemade vacuum-forming machine. Note the balsa reinforcing structure under the screen. The frame in the foreground is made from hardboard.

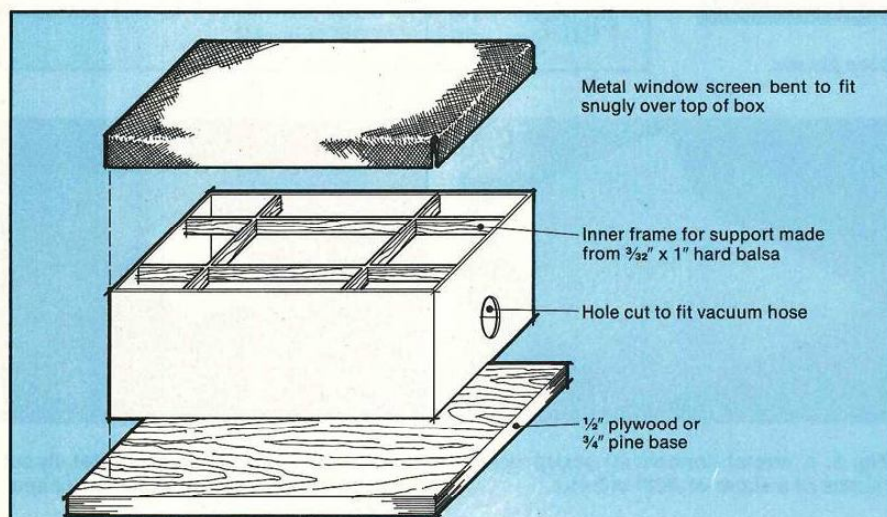


Fig. 11

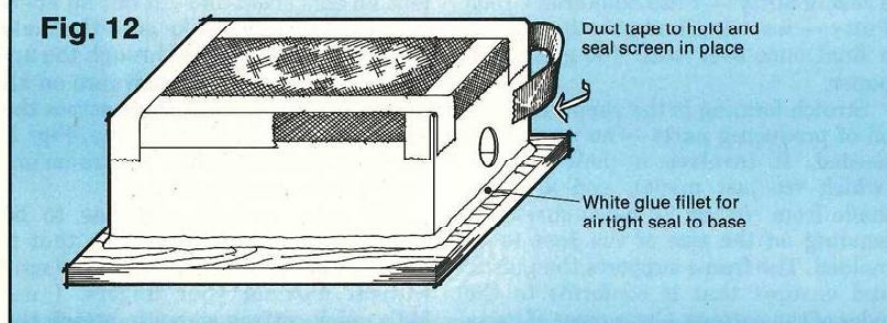


Fig. 12

stick, but any good 5-minute epoxy will do.

Next, attach the plastic sheet to the frame using masking tape on all four sides, Fig. 3. If you're using opaque plastic, hold it up to a light and trace the outline of the cutout with a felt tip marker, Fig. 4. This gives you an aiming point for inserting the male pattern.

To heat the plastic and soften it for forming, hold the plastic in its frame over an electric toaster or an oven burner set on low, Fig. 5. If you go the oven burner route, be extremely careful and hold the frame with a padded, flameproof mitten. The plastic should start to soften in a few seconds and will begin to sag into the cutout. In a few more seconds as it softens further, this process will reverse and the plastic sheet will shrink slightly and pull taut across the aperture — you may even see a thin wisp of smoke. The plastic should now be ready for forming, but don't take this for granted. Poke it with the eraser end of a pencil to make sure that the plastic is the proper rubbery consistency.

**The moment of truth.** Push the stick-mounted male pattern into and  $\frac{3}{16}$ " beyond the cutout in the frame, Fig. 6. This pulls the plastic sheet tightly over the pattern, Figs. 7 and 8. If the finished product is not to your satisfaction simply reheat and remold. Now all that has to be done is to trim away the excess plastic, Fig. 9. I find it easier to leave the male pattern inserted while doing this, especially if the canopy is to be cut into sections.

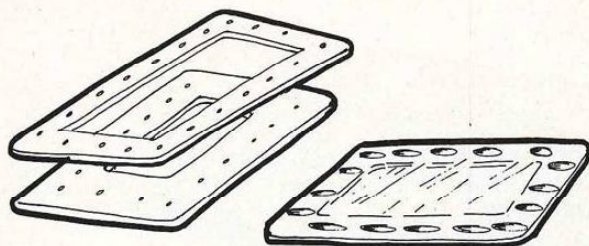
Stretch forming is good for small parts. The thickness of plastic sheet used in this process should not exceed about .020" and the parts formed should be a maximum of about 2" by about  $\frac{3}{4}$ " — a fairly large range for most modelers' needs.

**Vacuum forming.** For larger parts and heavier plastic sheets, you will need to use the vacuum-forming method. This, of course, requires the appropriate vacuum-forming equipment, but don't panic; you probably own the most complex piece of equipment needed — a vacuum cleaner!

The rest of the equipment is easy to build, Fig. 10, and the forming process is simple. Figure 11 shows the construction of my vacuum box. Start with a shoe box-size cardboard box and remove the bottom. Build an inner frame from  $\frac{3}{32}$ " x 1" hard balsa. Make sure that this is securely glued in place. Cut a piece of window screen (metal, not plastic) slightly larger than the bottom of the box and fold the sides down so the screening fits like a lid. Use duct tape to hold this in place and form a reinforced border.

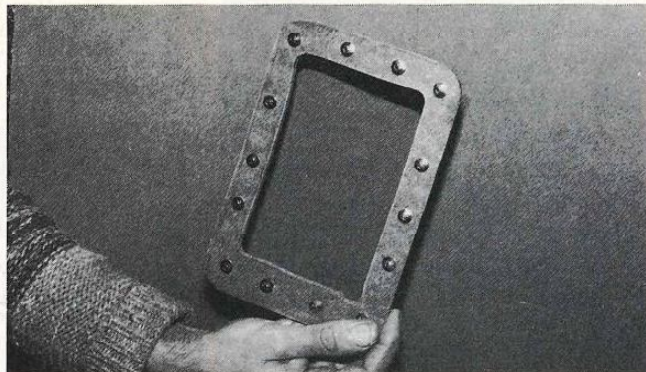
In one end of the box cut a circular hole slightly smaller than your vac-



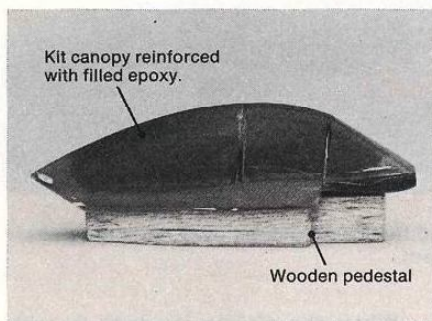


1/4" hardboard frames for various sizes of plastic sheet

**Fig. 13**



**Fig. 14.** Clear plastic is attached to the frame with thumbtacks.



FINESCALE MODELER: Paul A. Erler

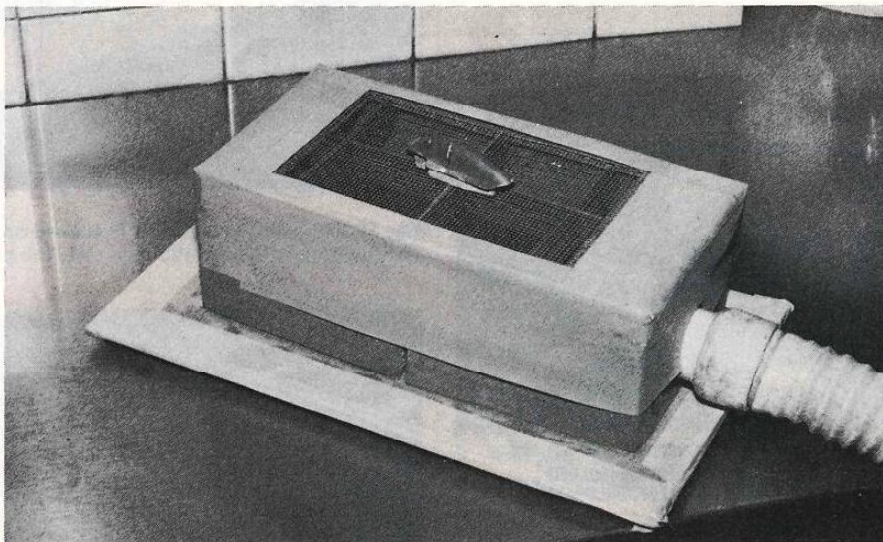
**Fig. 15.** Each male pattern should be placed on a pedestal to allow the plastic to completely form around it.

uum cleaner hose fitting; the hose nozzle will be forced into it later. Reinforce this hole with duct tape. Next, make a 1/2" plywood or 3/4" pine base slightly larger than the box. This will make the box sufficiently heavy to prevent it from sliding around while in use. Secure the box to the base with several applications of white glue to ensure an airtight seal. Figure 12 shows the final assembly. There, that wasn't so hard, was it? This plan can be modified to suit the materials that you have on hand.

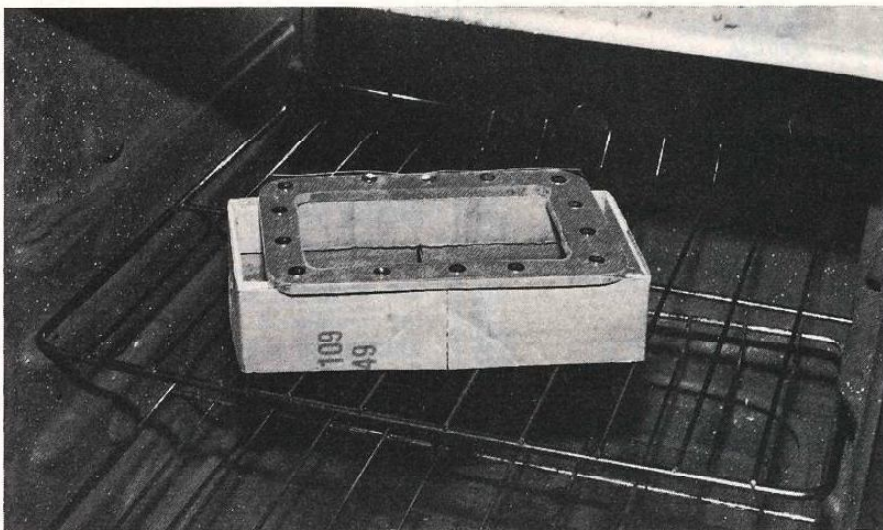
**Vacuum frames.** All that needs to be made now is a frame to hold the plastic sheet during the softening phase. A good material for this is 1/4" hardboard (Masonite is one brand). Cut three or four pieces about the same size as the top of the box you've just made. Cut out an aperture using a saber saw, leaving at least a 1" border. Cut progressively smaller apertures in the other frames, Fig. 13. The various size frames hold different sizes of sheet plastic; which one you use depends on the size of the part to be formed.

Next, use a 1/32" bit to drill a series of holes around the perimeter of each aperture. Thumbtacks will be pushed through the sheet of plastic into these holes to hold the plastic during forming, Fig. 14.

To get a good copy from your machine, the male pattern should be



**Fig. 16.** The male pattern on the screen, ready for the forming process.



**Fig. 17.** A cardboard box is used to keep the frame off the hot oven racks.

placed on a sturdy pedestal, Fig. 15. This ensures that the heated plastic is pulled over the entire pattern, defining the edges for easier trimming. Make sure that the pedestal supports the pattern along its entire length. If the pat-

tern teeters or moves during the forming process, the molded copy will distort. Also, build up the pedestal under sharp corners so they don't puncture the plastic and ruin the vacuum.

**Using the homemade machine.** Now



## The SOURCE For...

Casting resins and  
mold making materials

"Make one or  
one thousand  
with Castolite."  
Catalogue \$1.00

### CASTOLITE

Dept. 85 C/FS  
P.O. Box 391  
Woodstock, IL 60098

## PASTEL WEATHERING KIT



AT your dealer \$7.95. Direct orders \$8.50 postpaid.

### KOPRO - KP INJECTION MOLDED 1/72 KITS FROM CZECHOSLOVAKIA

# 1	MIG 15 - ITU. (2 seat)	\$5.95
# 2	DELPHIN L 29	5.95
# 3	AVIA B 534	5.95
# 4	IL-10/AVIA B 33	5.95
# 5	MIG 19	5.95
# 6	LETOV S 328	5.95
# 7	MIG 17 PF	5.95
# 8	AVIA B 35	5.95
# 9	POLIKAPPOV P02	5.95
# 10	AERO C 3A	6.95
# 11	AVIA S 199	5.95
# 12	LAVOCKIN LA 7	5.95
# 13	MIG 15	5.95
# 14	CS 199 (2 seat)	5.95
# 15	AERO L 39 ALBATROS	5.95
# 16	LETOV S 16	6.95
# 17	AVIA B21	6.95
# 18	JAK-23	5.95
# 19	MIG 21 MF	6.95
# 20	VICKERS SPITFIRE Mk. LF IXE	7.50

### PEGASUS INJECTION MOLDED 1/72 KITS FROM ENGLAND

#002	Spitfire F22/24	8.95
#003	Siemens Schuckert DIII	8.95
#004	Gloster Gauntlet	8.95
#005	Fairey Fox MKI	11.95
#006	Hispano HA 1112	8.95
#007	Gloster Gamecock	8.95
#008	Sopwith Snipe 7F1	8.95
#009	Supermarine Spitfire F-14	8.95
#010	Fairey Albacore	11.95
#011	Curtiss F9C-2 Sparrowhawk	8.95
#012	Focke-Wulf FW 44J "Stieglitz"	8.95
#013	Bristol M.1c	8.95
#014	Grueman F3 F-2	8.95

ON ALL KIT ORDERS PLEASE INCLUDE  
\$1.00 FOR POSTAGE. MC AND VISA AC-  
CEPTED ON ALL ORDERS.

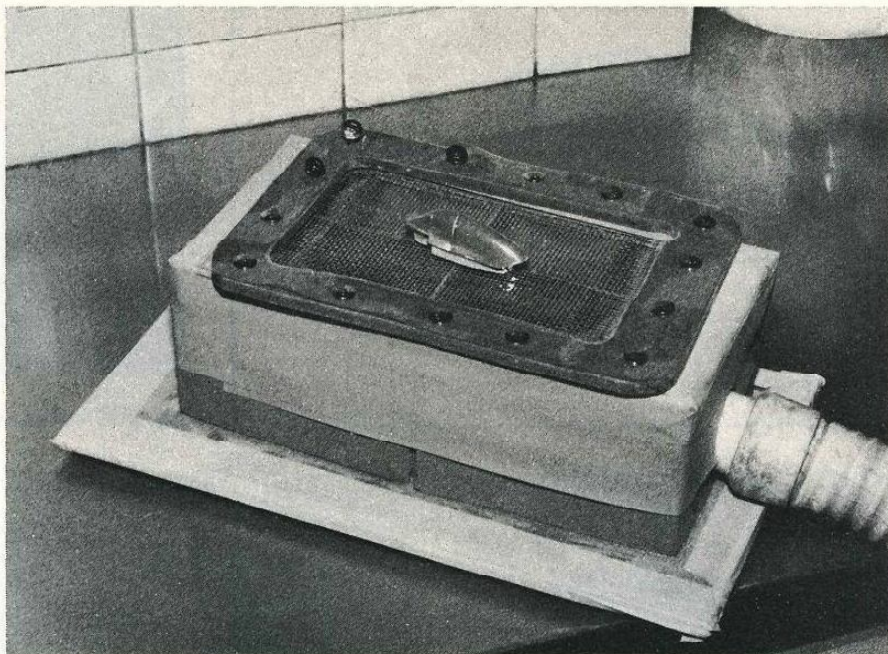


Fig. 18. The vacuum cleaner is turned on and the frame placed over the male pattern. The hot plastic is sucked down over the pattern.

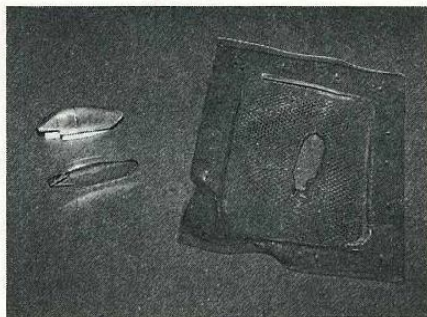


Fig. 19. Pat trims and opens the canopy while it's still on the male pattern. The support of the pattern prevents the thin plastic from collapsing under the knife blade.

you're ready to start forming. Preheat the oven to 250 degrees. While you're waiting for the oven to come up to temperature, set up your vacuum box. Plug the vacuum hose into the hole in the side of the box and place the pattern in the middle of the screen, Fig. 16. Thumbtack a sheet of plastic to the frame and place it in the oven to soften. Use a homemade wooden or cardboard rack to keep the sagging plastic from touching the rungs of the oven rack, Fig. 17.

As the plastic heats, watch closely for the moment when the plastic becomes taut after the initial sagging. Poke it now and then until you're satisfied that it has a suitably moldable, rubbery consistency. Different thicknesses of plastic will soften at different rates so never take your eyes off it during this stage. Experience will make it easier for you to judge how long the plastic should heat.

When the plastic is ready to mold, flip on the vacuum cleaner. Wearing your padded mitten, snatch the frame with the soft plastic on it from the oven and lay it on top of the pattern. In the blink of an eye the plastic will be sucked down tightly over the pattern, giving you a perfect part, Fig. 18. It's almost anticlimactic. Turn off the oven and the vacuum, pull the plastic sheet from the frame (watch out for those hot thumbtacks), and cut out the part, Fig. 19.

In no time at all you'll be a vacuum-forming fool, no longer content with many of the kit-provided parts. You'll be making your own canopies, wheel wells, spinners, air scoops, landing gear doors, and even entire fuselages. With this technique in your bag of tricks you'll be able to improve stock kits — and you'll have the freedom to model subjects that may never be kits. **FSM**

## SOURCES

Borden Inc., Columbus, OH 43215.

HobbyPoxy 2, Petit Paint Co., 36 Pine Street, Rockaway, NJ 07866.

K&B Manufacturing, 12152 Woodruff Avenue, Downey, CA 90241.

Sig Manufacturing Co., Inc., Route 1, Box 1, Montezuma, IA 50171.

Squadron Mail Order, 1115 Crowley Drive, Carrollton, TX 75006.



# AUTHENTIC

You choose a model for its authentic reproduction. You spend hours building in perfect detail and precision scale. When it comes to the finish, the match must be exact not approximate. We understand your needs and that's why we make Polly S modeling colors in authentically matched WWII colors, the most needed Federal Standard 595A colors, plus a broad selection of general purpose and weathering colors.

Polly S colors are made with extra fine pigments, producing a super thin, skin-tight film that will match the scale of the most demanding models. Application by brush or airbrush

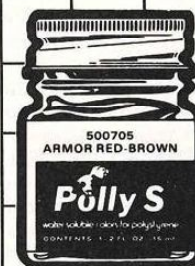
is smooth and easy and since Polly S is water-based it dries fast and clean-up is a snap.

We care about the things you treasure in a model — authenticity, precision and accuracy. Polly S colors — they're at your favorite model and hobby shop now.

For more information send a large SASE with 2 stamps to our address below.



**FLOQUIL-POLLY S COLOR CORP.**  
Route 30 North • Amsterdam, N.Y. 12010-9204



For color charts with actual color chips enclose: \$1.00 for General Flat Colors (Specify No. 590244) \$1.75 for Camouflage Colors (Specify No. 590246)

## steel Bonnets

### historic et fantasy

### miniatures

Compare our figures and see if you agree that they are absolutely the finest miniatures & at reasonable prices!

**For A Listing Send \$.50 To:**

**Steel Bonnets**

**P.O. Box 2792**

**Plainfield, N.J. 07062 - 0792**

A COMPANY OF

THE OLD  GUARD, INC.

**Rebel  
Standard  
Bearer  
90mm  
Only  
\$16.95!**



**90/2**



Got a modeling problem? FSM Clinic is here to help. FSM's staff will try to answer any modeling question and solve any modeling problem you have. FSM Clinic, however, is not a reference service for markings, unit histories, and other non-modeling, research questions. Send your questions to FSM Clinic, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

Conducted by Paul Boyer

**Cleaning up for acrylics.** FSM author William Tilton suggests using Polly S Prep instead of mineral spirits or rubber cement thinner to clean plastic before painting with acrylics (see first item in FSM Clinic November/December 1984). Prep is an alcohol-base cleaner that dissolves oils, reduces static electricity that attracts dust, but doesn't harm styrenes. *Paul Boyer*

**More on Napoleonic figures.** Since Jose Azzari's question about 1/72 scale Napoleonic figures appeared in the January/February 1985 FSM Clinic, ESCI has released a series of 1/72 scale plastic Napoleonic figures. They are Waterloo French Guard (0214), Waterloo Highlanders (0215), Waterloo field accessories (0216), Scotts Greys (0217), Polish lancers (0218), and British and French artillery (0219). *P. B.*

**Plans for merchant ships.** Where can I obtain plans and drawings for merchant ships? Most of the plans I have found deal with warships. *James Petty*

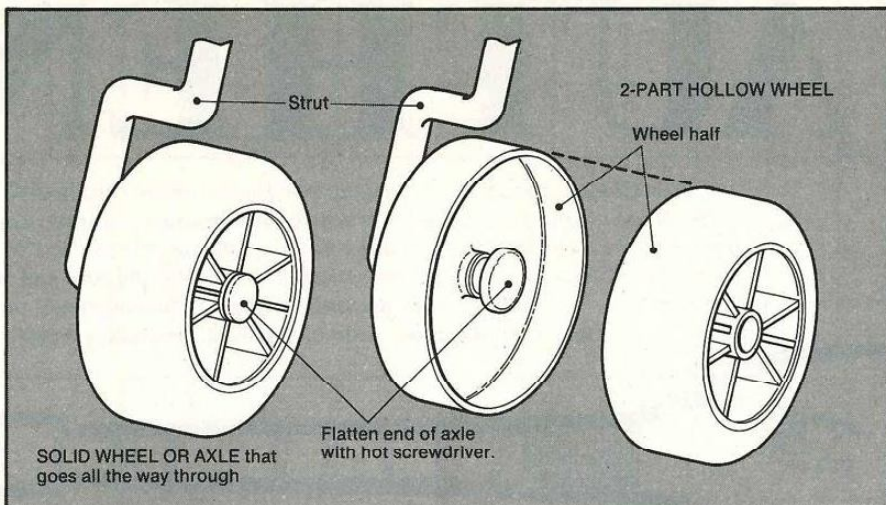
You should be able to get plans from Repla-Tech International, 48500 McKenzie Highway, Vida, OR 97488, and from Taubman Plans Service, 11 College Drive, Box 4G, Jersey City, NJ 07305. Both have extensive lines of drawings and model plans on all types of ships. *P. B.*

**Yellowing white paint.** My white paint always tends to grow yellow in the bottle or on the model as it gets older. Is there any way to prevent this? *John Odin*

I add one or two drops of Floquil Big Sky Blue (R56) to a 1-ounce bottle of Reefer White (R11). This is just enough to counteract the tendency of the paint to yellow due to its Glaze (binder) content. This works with any white paint; just make sure you use a compatible light blue with your favorite white. Don't mix Floquil with Pactra, Polly S with Testor, and so forth. *P. B.*

**Gunmetal.** How do modelers get that realistic gunmetal effect on 1/35 scale machine guns? *Thomas Dinackus*

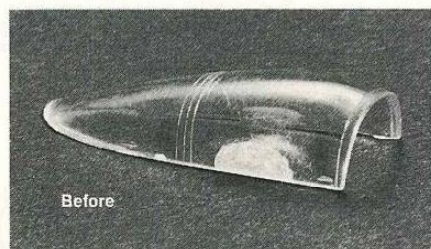
Try Metalizer or Liqu-a-plate paints. These can only be airbrushed, but after you let them dry for ½ hour, you can buff the gun with a soft cloth, achieving a realistic metallic finish. Both lines have a gunmetal color. Another way is to paint the guns flat black and accent them with Rub 'n Buff, a waxy, metallic paste. *P. B.*



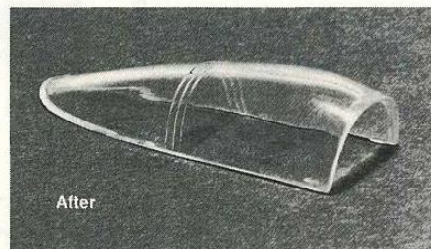
**Keep 'em rollin'.** How can I attach the wheels to my Revell 1/32 scale F-16A kit so that they will roll? Also, I have a canopy with a blemish caused by plastic cement. Is there any way to eliminate it and still keep the canopy clear? *Rosaura Ona*

I don't recommend rolling wheels on aircraft models because they may tempt you to scoot the model along a shelf, table, or floor; that's fine, but the landing gear struts really weren't made for this much stress and they may break. But, if you want them to roll, here's how. I'm not familiar with the Revell 1/32 scale F-16 kit, but it probably has two-piece wheels. If the axle on the strut doesn't go all the way through the wheel, flatten the end of the axle with the inside half of the wheel mounted. Then reattach the other half of the wheel. If the axle goes all the way through, simply flatten the protruding end.

It will take a bit of work to solve the canopy problem. First, sand the blemished area with wet 400-grit sandpaper. Move the sandpaper in little circles. It may take a while, but you should be able to smooth out the flaw. Next, repeat this with wet 600-grit sandpaper, first pressing hard, then gradually easing up on the pressure, again sand-



ing in tiny circles. Then use plastic polish, rubbing compound, or toothpaste (not a gel type) to polish the area smooth. Keep polishing (it may take a while) until the flaw is invisible. As a final touch, apply a coat of Future acrylic floor polish (another brand is Brite) with a soft brush. *P. B.*





**Static grass.** Sheperd Paine mentions static grass in his book *How to Build Dioramas* (Kalmbach) but I can't find it in my local hobby shops. Where can I get it?

Robert Claypoole

Vintage Reproductions, Box 7098, Colorado Springs, CO 80933, sells static grass in flexible bellows called Puff'N-Paks. There are summer and winter assortments in two sizes. John's Lab, 4915 Dean Street, Woodstock, IL 60098, has 11 colors of static grass. William K. Walthers, Inc., 5601 West Florist Avenue, Milwaukee, WI 53218, imports three foreign static grass products: Kibri has seven colors, Hannes Fischer has summer and autumn colors, and Noch has five colors with a dispenser.

P. B.

**Europe I colors.** Does any paint manufacturer make the Europe I colors FS 34092 Green and FS 36081 Gray? Gary Goldblatt

Recently, Testor has released FS 34092 in its Model Master paint line, and the only company to produce FS 36081 is Compu-color (CAC 14). Compu-color is available from Rosemont Hobby Shop, P. O. Box 139, Trexler Mall, Trexlertown, PA 18087.

P. B.

**Leaky syringe.** I like to use a hypodermic syringe for applying liquid cement but the cement leaks out of the needle. What's going wrong?

Gary Douglass

It sounds to me as if your syringe problem is due to a bad seal on the end of the plunger. The liquid cannot escape from the needle unless it is replaced by air. If the seal is shot, air can enter the syringe and allow the liquid to escape. Try replacing the entire syringe with a fresh one. You may find that the seal has a short life when exposed to volatile chemicals like liquid cement.

P. B.

**Take it all off.** How can I take decals and paint off an old model?

Don Lewis

There are a number of ways to remove paint and decals from built up models. First, purchase a spray can of Easy-Off Oven Cleaner and spray a liberal coating of the stuff on your model. This is a caustic substance, so make sure you do this outdoors or in a ventilated garage. Watch where the spray goes, too. I got a small plastic washtub (Rubbermaid) and spray models in it. Let the goo soak in for at least six hours, then scrub the model with an old toothbrush. The old paint and decals should come off easily, but if they don't, apply another coat of Easy-Off and repeat the procedure.

There are three commercially available hobby paint strippers: Accustrip from SNP Industries, 17 Hudson Road, Bolton, MA 01740; Paint Strip from Custom Car Engineering, R. D. 1, P. O. Box 199C, Creamridge, NJ 08514; and Scalecoat Paint Remover, 177 Wheatley Avenue, Northumberland, PA 17857.

Another method is to soak the model in an industrial strength cleaner such as Tenant 658 or Johnson Wax J-600 used full strength. I've also heard of soaking the model in brake fluid (effective but difficult to do), and soaking it in chlorine bleach (smelly and it affects some plastics).

P. B.

FSM

## COMBAT SERIES

### MILITARY HARDWARE IN BRASS

Here is an enlarged photo of our 50 cal., Machine gun, with WW-11 Cradle on M-3 Ring Mount. IT'S ALL THERE!

Applicable to 1/32, 1/35 scales

To receive our latest illustrated Catalog Sheets, send a STAMPED SELF ADDRESSED envelope to COMBAT SERIES.



•COMBAT SERIES•  
Dept. ML, P.O. Box 475, Pinedale, CA. 93650

### Hot-wire Styrofoam Cutter

Bow frame cutter uses 115 Vac, any steel wire 0.5 to 1 mm dia. shaped to any profile the user desires. Circular, 3-D and angular cuts are no problem. Big throat gives cuts to a 13.9" radius on material up to 7" thick. Money-back guarantee.

# CUT

Styro-Cut  
3-D

\$59<sup>95</sup>  
LIST



### Precision Jig Saw

Rugged construction—18" throat—2.2" cutting height—115 Vac. 8" x 9 1/4" table can be angled to 45°. PTO for optional flexible shaft. Money-back guarantee.

Call or write  
for free catalog. 614/445-9621

## hobby products co.

Dept. FSM P.O. Box 07846 Columbus, OH 43207

# SAW

Hobby Lux 450

\$120<sup>00</sup>  
LIST



## THE INTERNATIONAL PLASTIC MODELERS SOCIETY

### DO YOU WANT TO LEARN MORE ABOUT MODELING?

### IPMS/USA OFFERS YOU...



Membership in a non-profit organization founded "BY MODELERS FOR MODELERS"

Membership includes 4 Quarterlies and 6 Updates per membership year. They contain articles on camouflage and marking, super-detailing, model conversions, scratch building, historical information, and much more.

Yes! Enroll me now in IPMS/USA.

I enclose \$ \_\_\_\_\_ for 1-year membership in IPMS/USA. I

understand this membership includes subscription to four IPMS/USA

Quarterlies and six Updates.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Country \_\_\_\_\_

Type of Membership:

☐ Adult \$18.00 ☐ Foreign \$21.00 ☐ Junior \$10.00 Birthdate \_\_\_\_\_  
(17 years and under)

For Samples, send \$2.75.

Make check or money order payable to IPMS/USA

[Please don't send cash!]

83044



Mail to:  
IPMS/USA  
New Membership  
P. O. Box 480, FSM  
Denver, Colorado  
80201

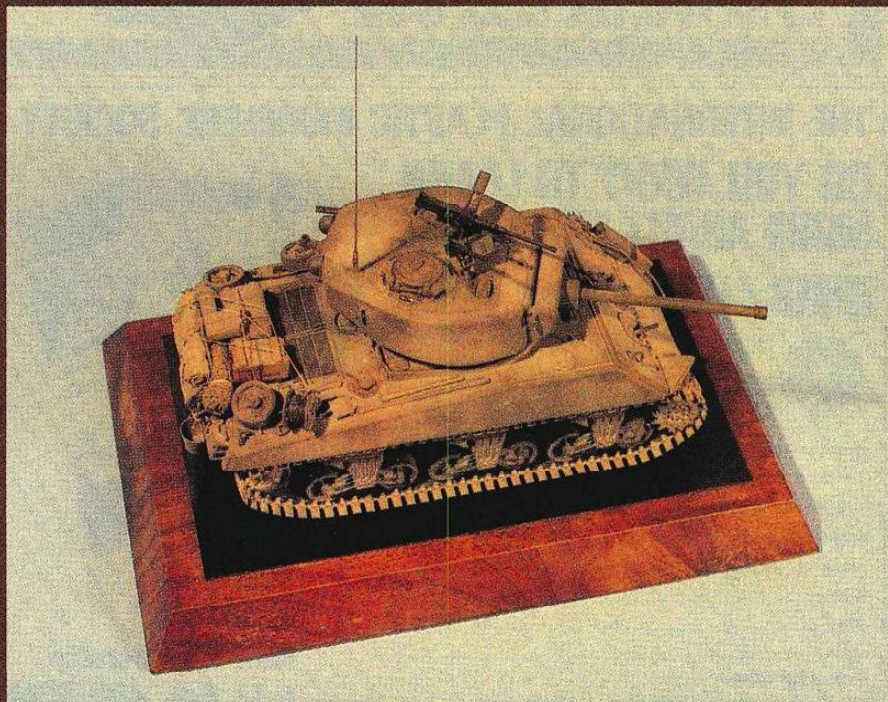




# Modeling the Jumbo assault SHERMAN M4A3E2

A 1/35 scale conversion to an unusual variant

BY DAVE MUSIKOFF



Though far from colorful, Dave's Jumbo is an unusual and impressive model. Unlike the standard T-23 76 mm turret, the Jumbo turret had no pistol port on the side.

EARLY IN 1944 U. S. forces had no heavy tanks for the planned invasion of occupied Europe. The standard American medium tank, the M4 Sherman, was too thinly armored and too lightly armed for the assault role. Time was short and the options few.

One option was to uparmor and upgun the late-production M4A3. The new tank was designated M4A3E2, indicating a temporary design to be employed while a better weapon was developed. Modifications included an all-new cast turret with sides, front, and rear approximately 6" thick. Extra 1½" armor plates were welded over the front and sides of the hull, making these surfaces 4" and 3" thick, respectively. A huge, angular gun mantlet 7" thick on its front surface was fabricated from flat plates, and a new, heavy differential-final drive housing 5½" thick was designed for the nose.

The new armor made the M4A3E2 seven tons heavier than a standard M4A3. To handle the extra weight, lower final-drive gear ratios were used,





Figs. 1 and 2. Dave first mounted the 75 mm gun from the Tamiya M4A3 (left) in his Jumbo, but settled on the longer and

more powerful 76 mm barrel from the Italeri M4A1 (right). Many Jumbos were modified in the field with the bigger gun.

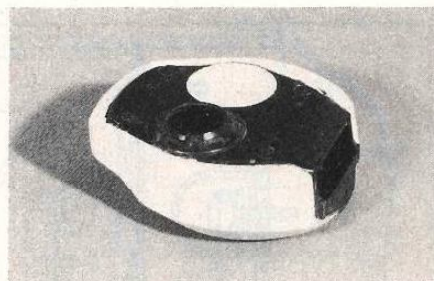
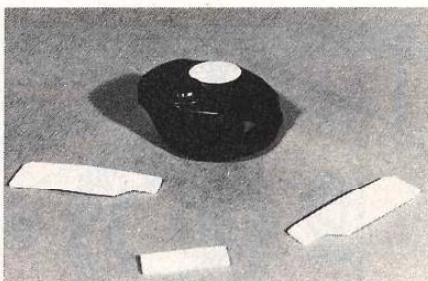
lowering maximum speed from 26 to 22 mph, and diminishing operating range by roughly 100 miles. Extended duck-bill grousers were fitted to the tracks as standard equipment to reduce the ground pressure. As the main function of the new tank was to be infantry support, the standard 75 mm M3 gun was chosen over the more powerful 76 mm gun, which would have been more effective against enemy armor.

A total of 254 M4A3E2s was manufactured from May to July 1944. Except for a few kept in the U. S. for testing, all were shipped to Europe for the drive into Germany. The tank first saw action during the July 1944 breakout from the Cherbourg Peninsula, Operation Cobra. Nicknamed "Cobra-King" as a result of the operation, the name failed to stick; instead the M4A3E2 was — unofficially — the "Jumbo."

Although far from perfect, the Jumbo Sherman proved effective, being all but immune to enemy antitank guns at longer ranges. Even the vaunted German Panther could not penetrate the frontal armor at long range, making the E2s ideal for leading columns of standard tanks. Despite maintenance problems brought on by its weight, the vehicle proved popular with crews, largely because the Jumbo could absorb terrific punishment and bring them through it alive.

Late in the campaign some M4A3E2s were rearmed by field workshops with the high-velocity, long-barreled 76 mm gun, improving their ability against enemy armor. During the Battle of the Bulge the first U. S. armor to break through to the encircled American paratroopers at Bastogne were Jumbos attached to Patton's 3rd Army.

**The Jumbo conversion.** There is no kit of the M4A3E2, but with a little work you can build an authentic model of this Sherman variant. The basis of my conversion is Tamiya's 1/35 scale M4A3 (kit MM-222), which provides about 75 percent of the parts. Other parts come from Italeri's M4A1 (kit No. 225), and the rest consists of .010", .020", .030", .040", and .080" sheet sty-



Figs. 3 and 4. (Left) The Italeri turret with the loader's hatch hole plugged with .010" styrene, and the first layer of extra armor ready to be cemented to the sides and rear. (Right) The same turret after adding both .080" armor layers.

rene, body putty, and a few nondescript pieces from the spare parts box. The conversion consists of beefing up the turret, building a new gun mantlet, and adding extra armor to the hull front, sides, and final-drive housing, Figs. 1 and 2.

**Enlarging the turret.** The shape and layout of the Jumbo turret were similar to the standard T-23 Sherman turret, which comes in the Italeri kit. You will need the upper and lower turret pieces (parts 82 and 85), the mantlet fairing (75), commander's hatch cover (86), and the lift rings (91 and 92). Don't use the antenna mount — it's a British type, incorrect for the American Jumbo.

To begin, cement the upper and lower turret halves together, add the mantlet fairing, and let dry. Remove the turret vent and machine gun brackets from the turret rear, fill the tiny hole in the left front roof, and file off the details just behind the hole. Using a circle template or dividers, cut a 1" diameter circle from .010" plastic and cement it into the large round hole on the left side of the turret roof, Fig. 3.

Remove the turret ring lugs from the Italeri turret so it will fit the Tamiya hull. Protect the commander's cupola by covering it with several layers of masking tape so it won't be mangled while the rest of the turret is reworked.

Using the templates, page 47, cut

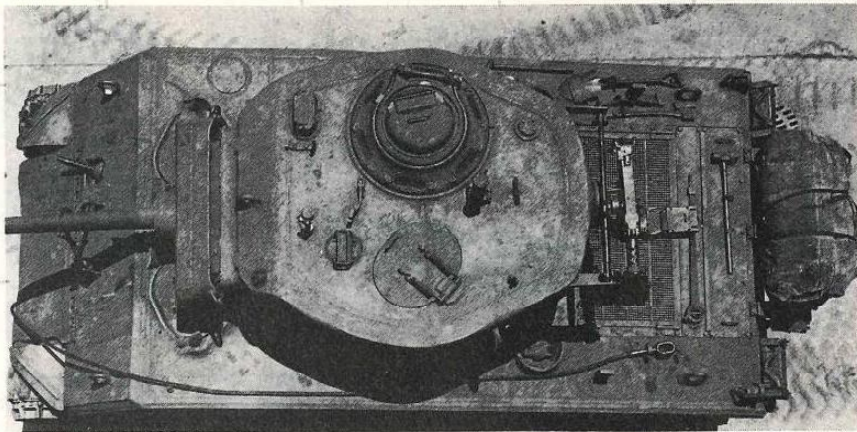


Fig. 5. The stock Italeri turret and the completed Jumbo turret. The mottled effect is caused by the model airplane dope used to add cast texture to the surface.

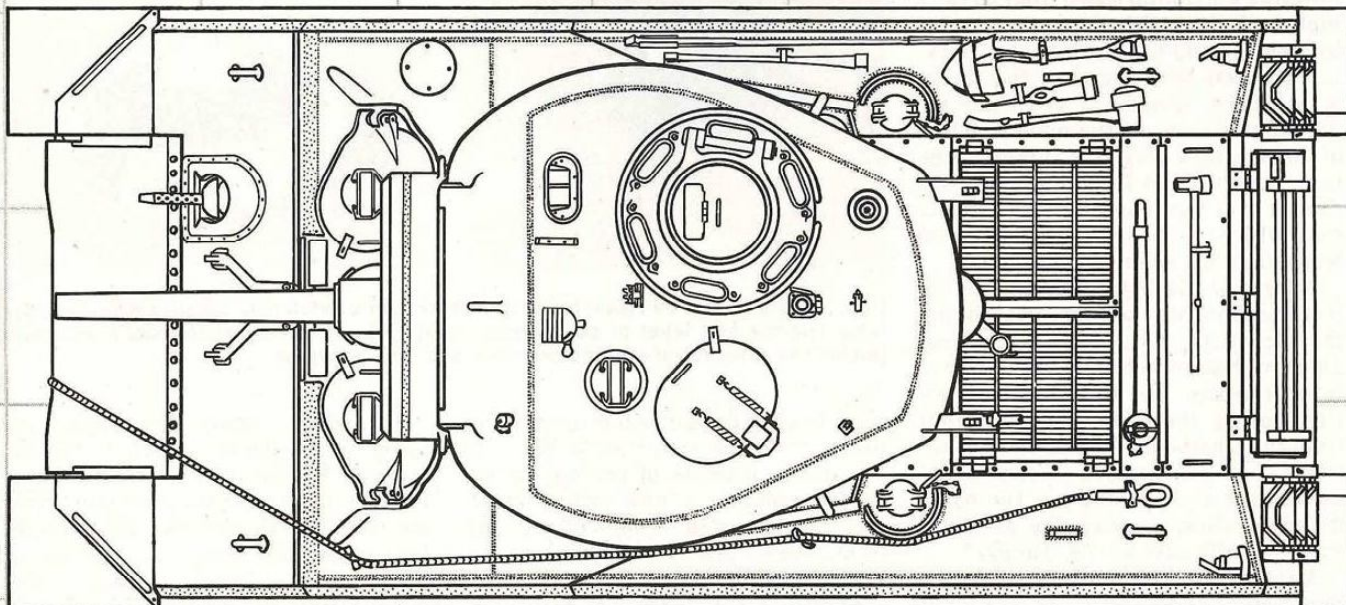


1/35 SCALE

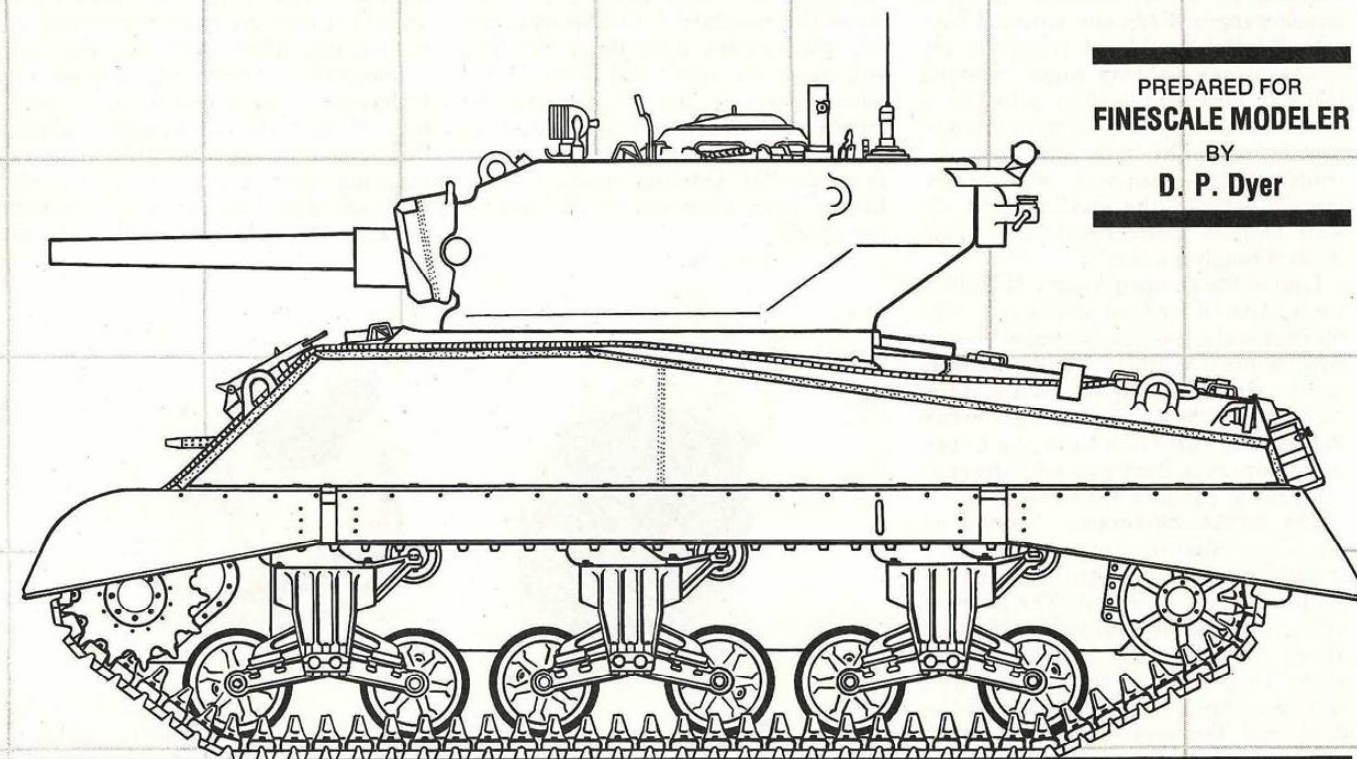
A useful overhead view of a Jumbo taken during the development of the tank in June 1944. The huge turret, the protruding gun mantlet, and the extra plates added to the hull show up well. Note the machine gun stowed on the rear of the turret, the tow cable on the left side of the hull, and the rest of the stowed equipment.



U. S. Army Signal Corps, Richard Hunnicutt collection



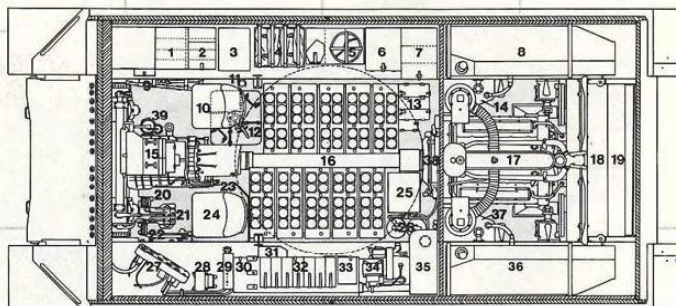
PREPARED FOR  
FINESCALE MODELER  
BY  
D. P. Dyer



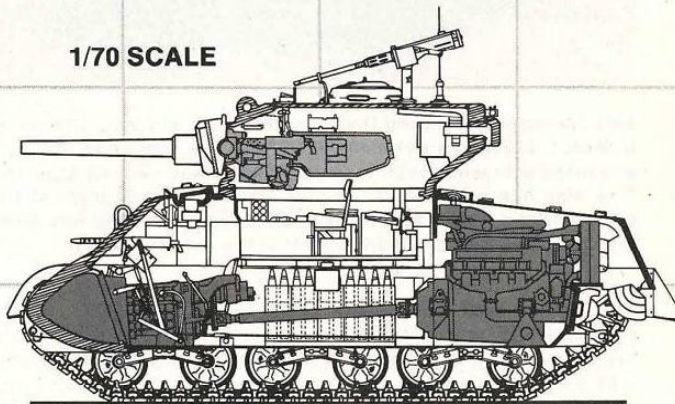


# KEY TO HORIZONTAL CROSS SECTION MEDIUM TANK M4A3E2 75 (W)

- 1 Eight boxes .30 cal. ammo, 250 rounds each.
- 2 Eight boxes .30 cal. ammo, 250 rounds each. First aid kit above.
- 3 Spare parts.
- 4 Five haversacks.
- 5 Canvas bucket and gunner's quadrant on top of three water cans.
- 6 Stove and rations.
- 7 Six .50 cal. ammo boxes, 100 rounds each. Manuals above.
- 8 Right-hand horizontal fuel tank.
- 9 .30 cal. tripod. Two .30 cal. MG barrels.
- 10 Bow machine gunner's seat.
- 11 Spare .50 cal. MG barrel.
- 12 Floor escape hatch.
- 13 Tools and spare parts boxes.
- 14 Right-hand vertical fuel tank.
- 15 Driver's head cover. Four periscopes. Six spare periscope heads above gearbox.
- 16 Transmission shaft cover. Wet stowage for 50 rounds of 75 mm ammo both sides, full width of lower hull.
- 17 Ford GAA V-8 engine.
- 18 Twin radiator housing.
- 19 Cooling air deflectors upper and lower.
- 20 Foot throttle pedal.
- 21 Steering levers and linkage.
- 22 Clutch pedal.
- 23 Gear change lever.
- 24 Driver's seat.
- 25 Track tools.
- 26 Two 10 lb. CO<sub>2</sub> containers for fixed fire extinguishers.
- 27 Instrument panel.
- 28 Regulator for auxiliary generator.
- 29 Master switches.
- 30 Driving lights stowage position (not required M4A3E2) on top of battery box. Battery box runs under 32 and 33.
- 31 Flare projector and flares.
- 32 Seven .30 cal. ammo boxes 250 rounds each.
- 33 Six 2" smoke bombs.
- 34 Auxiliary generator.
- 35 Fuel tank for auxiliary generator.
- 36 Left-hand horizontal fuel tank.
- 37 Left-hand vertical fuel tank.
- 38 Oil cooler above clutch housing. Junction box above oil cooler.
- 39 Fire extinguisher, 4 lb. CO<sub>2</sub>.



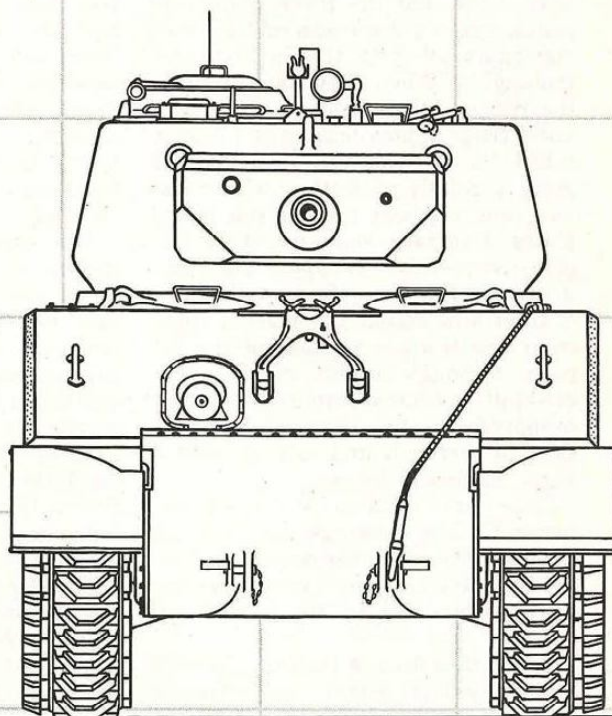
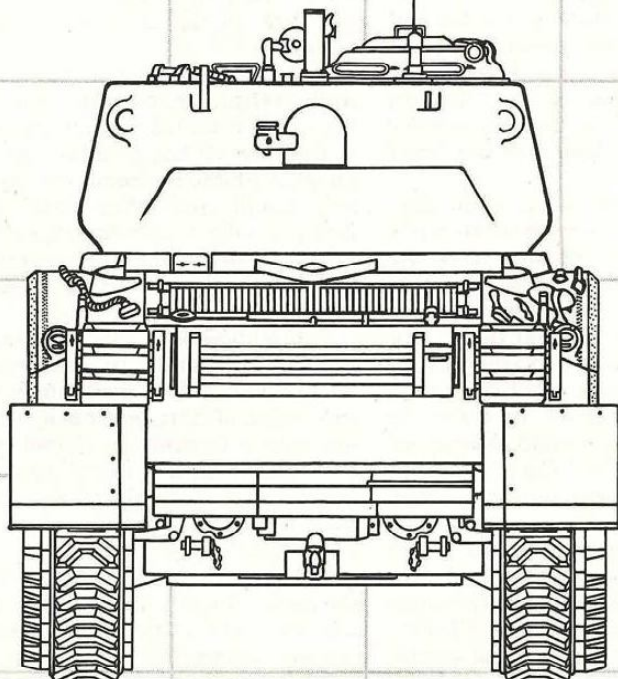
1/70 SCALE



## M4A3E2 ASSAULT TANK

**Length:** 20' 7"  
**Width:** 9' 7½"  
**Height:** 9' 8¼"  
**Weight:** 42 tons  
**Crew:** 5  
**Engine:** Ford GAA V-8  
**Horsepower:** 450 hp at 2,600 rpm  
**Fuel:** Gasoline

**Armament:** One 75 mm M3 gun or one 76 mm M1 gun, one .50 caliber M2 MG, two .30 caliber M1919A4 MG, one 2" smoke mortar.  
**Road speed:** 22 mph  
**Operating range:** 100 miles  
**Ground pressure:** 14.2 lb/square inch  
**Number produced:** 254







This Jumbo (4th Armored Division, 3rd Army, at Alzey, Germany, in March 1945) has been rearmed with the longer 76 mm gun and fitted with wire mesh for attaching foliage camouflage. The tank also has an extra .30 caliber machine gun in front of the commander's hatch, and the standard .50 caliber mg has been relocated to a new position in front of the loader's hatch.



Both photos, U. S. Army Signal Corps, Richard Hunnicutt collection

Ordnance personnel servicing a newly arrived M4A3E2 at Cherbourg, France, in November 1944. This tank carries the standard M3 75 mm gun. Note how the added hull plates do not reach to the corners of the hull, the beveled edges of the plates, and the thickness of the enormous special gun mantlet.

four turret side pieces and two rear plates. Don't worry about micrometer accuracy; these are only rough parts to add bulk and general shape. The final contours will be achieved with body putty — and lots of filing and sanding.

Carefully bend two of the side plates with your fingers until they conform to the turret sides, then bond one to each side using liberal amounts of liquid cement. Do the same with one of the rear plates, then secure all three parts with several sturdy rubber bands. It's important that this subassembly dry completely before you continue.

Once the joints between the turret and the first layer of "extra armor" have dried, add the three remaining plates, securing them with rubber bands and again allowing the joints to dry thoroughly. When they have, remove the rubber bands and you'll have a fairly crude approximation of a Jumbo turret, Fig. 4. Using your favorite filler putty, carefully patch the nooks, cranies, and crevices around the added plates. Compare your turret to the plans frequently, and apply the putty in several thin coats; thick applications of filler will soften the plastic, especially the thinner sections of the kit parts. Although building up the shape gradually is time consuming, it's better to apply four or five (or more) thin coats than to overdo it and end up with a soggy, half-melted mess.

Once you've built up the shape to correspond to the drawings, use files and sandpaper to refine the contours. Here again, take your time and compare the turret frequently to the plans and photos.

**Turret details and texture.** Carve a shallow "gutter" around the perimeter of the turret roof as shown on the

drawings. Mark the groove with a sharp pencil, then go over it with a fresh knife blade.

You have a couple of options for modeling the loader's hatch. While it could simply be scribed into the surface using a knife blade and the hinge and spring detail added afterward, I decided to use the hatch molded into the top of the Tamiya turret. I used a razor saw to cut a section out of the Tamiya turret slightly larger than the hatch, then carefully trimmed away everything but the hatch and hinge detail.

Now comes the tricky part. To make the hatch appear to be sunk into the turret roof instead of sitting on top of it, you must carefully cut a hole in the roof the exact shape and size of the hatch and hinge. Study the plans and carefully mark the location of the hatch with a sharp pencil — use the commander's cupola as a reference point. Once you've cut the hole, cement the Tamiya hatch flush with the top of the roof.

The Jumbo turret was a rough casting, but the Italeri turret and the parts we've added to it are smooth, so we need to rough up the sides, top front, and rear surfaces to better represent the cast texture of the real thing. The roof was a separate, rolled armor plate, so start by masking it off at the gutter line. Texture the rest of the turret by carefully brushing on small amounts of Pactra Hot Fuel Proof Dope (from the flying model airplane section of your hobby shop).

The dope softens the surface of the plastic almost immediately, and you should practice on an old part before using the technique on the Jumbo turret. Once the dope begins to soften the plastic and putty, stipple the surface

with a stiff-bristled, metal-handled glue brush from a craft shop or hardware store. Cut the bristles off about halfway up to make them even stiffer.

After stippling you should have a coarse texture that, when painted, will look remarkably like cast armor. When you are satisfied with the effect, set the turret aside and allow the dope to dry before handling it further. If you feel you've overdone it, sand the surface lightly to remove some of the roughness.

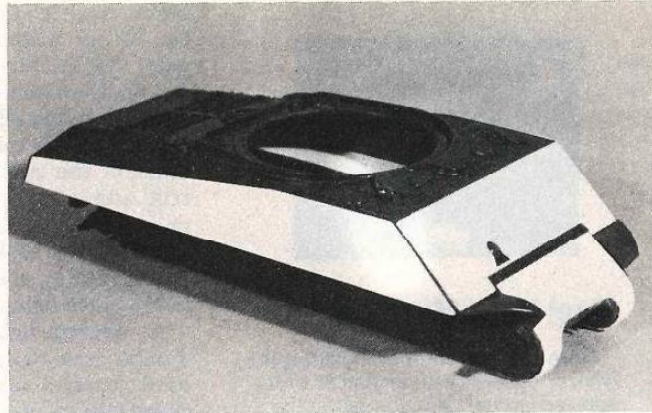
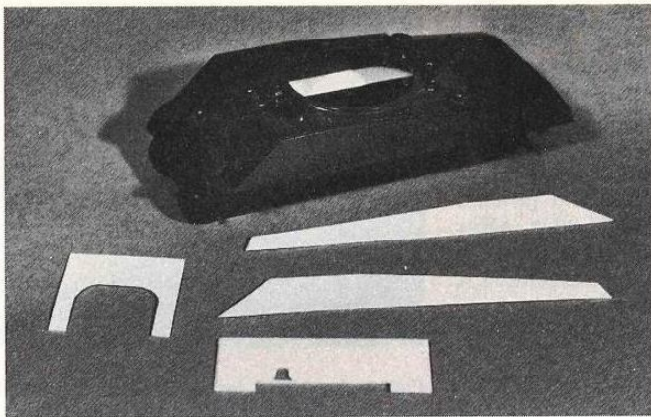
Drill a small hole in the left front roof to represent the opening for the 2" smoke mortar inside the Jumbo, and another near front center of the roof for the Tamiya searchlight. Make the half-dome ventilator on the turret rear from a part from your spares box; mine began life as the nose of an aircraft torpedo.

Add the machine gun pintle mount to the ventilator, machine gun rack to the turret rear, lift rings, sight in front of the loader's hatch (mine came from an old Nichimo Sherman kit), machine gun mount, and other turret details. Add a slender stretched-sprue antenna to the Tamiya antenna mount (part 83), and the Jumbo turret is complete, Fig. 5.

**Scratchbuilding the mantlet.** The rectangular Jumbo mantlet shape is fairly complex. I tried carving it from a solid block of styrene made by laminating several thicknesses of .080" plastic, but decided that a more realistic approach was to fabricate the mantlet from individual flat pieces similar to the original.

Use the templates, page 47, to make the parts. Cement the top to the back of the front and let dry. Test fit the side pieces to each other and the front plate and trim and bevel until the fit is right.





**Figs. 6 and 7. (Left)** The Tamiya hull and chassis and the add-on sheet styrene armor plates. All the raised detail on the hull front and sides has been filed off and the hull machine gun mount has

been cemented in place. **(Right)** The hull after adding the extra plates. Note that the front and side pieces do not reach all the way to the corners of the hull.

Cement the upper sides to the front and top, let dry, then add the lower sides. Finally, cement the bottom to the rest of the assembly.

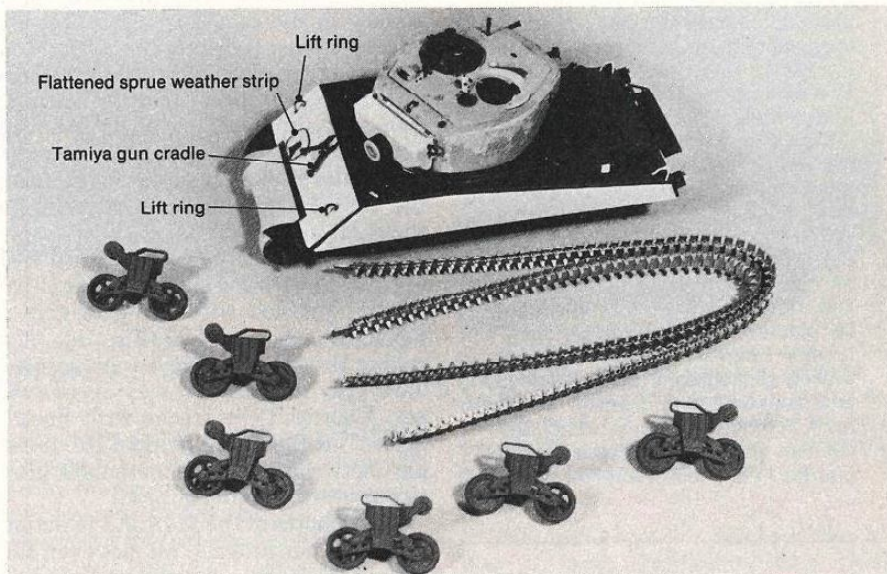
I made the gun collar (the round part from which the barrel protrudes) from an old Aurora Stalin tank fuel drum, but just about anything  $\frac{3}{8}$ " in diameter will do. Drill the collar to take the gun barrel (I used the 76 mm gun from the Italeri Sherman — it's longer, which makes the model more impressive), then cement it to the mantlet. Drill out the coaxial machine gun port (left) and the telescopic sight hole (right) in the front of the mantlet, then add a machine gun barrel to the left hole; it should stick out about  $\frac{3}{16}$ ".

Finally, add the two lift rings to the mantlet. Photos of the Jumbos show these rings in at least three different positions, and they were not perpendicular to the surface, but angled back at about 45 degrees.

Make mantlet trunnions from sprue about  $\frac{3}{16}$ " in diameter. File one side flat and cement the resulting D-shaped pieces on either side of the opening in the front of the turret. I simply cemented the completed mantlet to the trunnions; making it movable will require ingenuity on your part.

**Hull and final-drive housing modifications.** Start work on the hull by removing all protruding detail from the front hull plate and filing away the small raised ledge that runs along the bottom of the hull sides, Fig. 6. Install the hull machine gun ball (Tamiya part B4) now, because once the front hull plate is added you won't be able to position it through the tiny, keyhole-shaped aperture.

Using the templates cut one front and two side hull armor plates. Bevel the shaded edges about 45 degrees. Cement the plates to the hull and hold them in place with clamps and tape. Note that the added plates should not extend completely to the corners of the



**Fig. 8. The hull, turret, and suspension components ready for painting. Note the mixing of spoked and solid wheels on the suspension bogeys. The revised front plate on the Jumbo is relatively bare, which makes detailing it easy.**

hull — there should be a slight gap.

Cut the final-drive housing armor piece and cement it to the Tamiya housing (part B26). When the cement has dried, fair the armor into the surrounding plastic with putty. Like the turret the final-drive housing was cast, but it didn't have as rough a surface, so there's no need for the dope-and-stippling technique.

Enlarge the Tamiya turret ring to accept the Italeri turret. If you're concerned about the turret falling off, devise some lugs and corresponding cut-outs in the ring. My turret is simply a press fit into the ring; with all the added styrene and putty, it's heavy enough to stay put without much help.

Cement the upper hull to the lower hull and rear plate, add the final-drive housing, Fig. 7, and assemble the Tamiya suspension. There is a problem here, even with the stock kit: The sus-

pension does not protrude far enough from the hull sides. This is especially noticeable on the Jumbo, due to its increased width. The flaw is easy to fix; simply cement a  $\frac{1}{4}$ " x  $\frac{5}{16}$ " rectangle of .020" plastic between each bogey unit and the hull side.

The Tamiya Sherman has the standard solid bogey wheels, and while these are appropriate for the Jumbo, photos show that it was common practice to mix the solid wheels with the older spoked variety, Fig. 8. When assembling bogey units I substituted a few spoked bogey wheels from the Italeri kit, enlarging the axle holes to fit the Tamiya axles.

The Jumbo had a relatively uncluttered front plate. There were no headlights or siren, just two lift rings, the gun cradle, and a protective weather strip around the hull machine gun aperture. Position the Tamiya lift rings





## Meet Dave Musikoff

Dave lives in southern California, where he works as a technical writer and researcher. He majored in journalism at local colleges, and he claims to be one of the fastest one-finger typists in captivity. He's also been team manager for a professional Can-Am racing team, and a correspondent for three racing magazines at the same time! "It was a very exciting time in my life, but going two or three days without sleep or a decent meal can get a little old after a while," he confides.

Dave (shown here in the cockpit of the Spruce Goose) built his first model when he was eight and has been an avid modeler ever since, specializing in armor and aircraft, plus an occasional car or ship. He's an active member of IPMS/Canada and firmly believes that modeling should never be taken too seriously.

Other interests include hiking, bicycling, photography, purebred dogs, and beachcombing. He now shares his space with an elderly, aristocratic German shepherd, but expects to be married in the near future.

*Cindy Chick*

$\frac{5}{16}$ " in from the top edge of the hull plate and  $\frac{1}{4}$ " from the sides.

The Jumbo gun cradle differed from the standard Sherman fitting only in a few minor ways, so I used the kit part rather than make a new one. The hinges and mounts were scrounged from my spare parts box. I made the weather strip around the hull machine gun aperture by bending a thin piece of stretched spruce to the proper shape and cementing it with liquid cement. After the cement had dried thoroughly, I carefully filed the spruce flat.

**Final details.** The rest of the Jumbo hull was almost identical to a standard M4A3. I carefully trimmed off the solid cast hatch handles and replaced them with new ones made from copper wire, and replaced the latches on the fuel and water caps on the engine deck with stretched spruce. I made guards for the periscopes on the hull hatches from copper wire; although difficult to make, these add a lot of realism.

The tow cable consists of the end fittings from the cable in the Italeri Sherman and a length of .027" model air-

plane steel lead-out wire, available in the flying model airplane section of your hobby shop. Cut the wire to length, then hold it with pliers or tongs over the flame of a gas stove burner or propane torch until it glows red. This anneals the metal, changing it from stiff and springy to soft and pliable, and imparts a subtle rust color. After the wire has cooled, drill a small hole in each Italeri end fitting and cement it to the cable using super glue.

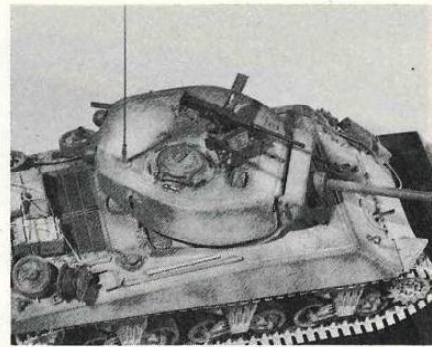
A common field modification to the Jumbo was replacement of the standard turret-mounted antiaircraft machine gun mount with two mounts, one in front of each turret hatch. This increased close-in firepower to protect the tank from infantry antitank weapons such as the Panzerfaust, which were encountered with increasing frequency in the campaign. Usually, one mount carried the standard .50 caliber Browning while the other was used for a .30 caliber weapon. I built two mounts from sprue and spare parts, then added a .50 caliber (from the Italeri kit) to the left mount and a .30 caliber gun (from the Italeri Arms Pack assortment) to the right mount, Fig. 9.

**Paint and markings.** I airbrushed my Jumbo with Pactra Scale Flat Olive Drab, lightened with white to give a faded, weathered look, Fig. 10. The rubber tires on the bogeys were painted dark gray to represent weathered rubber. I sprayed the tracks with Pactra Scale Flat Steel and painted the inner part between the guide teeth dark gray to represent the rubber pads.

Most photos of the M4A3E2 in action reveal no markings at all, not even the usual Army serial numbers! I've seen only one action shot with a serial number (USA 3082929), and even the standard yellow bridge-classification discs seem to have been painted over or sanded off.

This lack of decoration may have been a result of the Jumbo's use as the lead tank in armored columns. Combat photos suggest that many Jumbos began life with the usual white, five-pointed Allied stars, but almost without exception these appear to have been painted out, probably using fresh O.D. paint—those big white stars made excellent aiming points for enemy gunners. I duplicated the look of these toned-down markings by roughly painting over the Microscale stars using O.D. paint darkened with black to duplicate the look of fresh paint over the faded original finish.

**Tarps and nets.** Photos of the European campaign show mountains of extra equipment tied on top of most of the tanks, as well as plenty of "liberated" material. Adding such stowed equipment is one of the aspects of armor modeling that I enjoy most.



**Fig. 9.** As Allied forces moved closer to Germany, infantry antitank weapons such as the Panzerfaust rocket became more and more of a threat. Many Jumbos mounted an extra .30 caliber machine gun for close-in defense.

I make rolled tarps out of tissue paper, the kind that comes inside gift boxes (sometimes called French tissue). To start, cut a piece approximately to size, then carefully crumple it into a little ball, unfold it, and wad it up again. This takes the stiffness out of the tissue and makes it look more like cloth. Next fold and roll the tarp and tie it in place using thread. To duplicate webbed canvas straps use thin strips of 3M Micro-Pore surgical tape (available at a pharmacy).

Make rolled camouflage nets from fine surgical gauze, folding the edges in so the ragged threads don't show. Roll the gauze to the desired size, tie with thread, then cover the thread with surgical-tape straps. I paint both tarps and nets with watercolors because enamels make them look stiff and artificial.

Nothing on a pitching, rolling, vibrating tank stays for long unless it is secured to the vehicle, so plan your stowage carefully and logically (make sure nothing is positioned where it would restrict the guns or the movement of the turret), and don't forget to tie every piece of equipment to your tank in some way, Fig. 11.

**Weathering with watercolor—and ashes.** Start weathering by giving the model an overall wash of thin, black watercolor. I use German Pelikan-brand watercolors, but any quality brand will do. Watercolors are easy to use: If you think the effect is exaggerated, simply wash some of it off using a wet cloth or a cotton swab. The "secrets" to making watercolor stick to plastic are to always apply them over a dead-flat finish (no matter what you do, they won't adhere to a gloss finish), and to add a couple of drops of liquid detergent to the water.

Once the black wash has dried, give the tank a thicker wash of dark brown, concentrating the heaviest doses on the lower hull and suspension. Next, add a light rust-colored wash to the metal



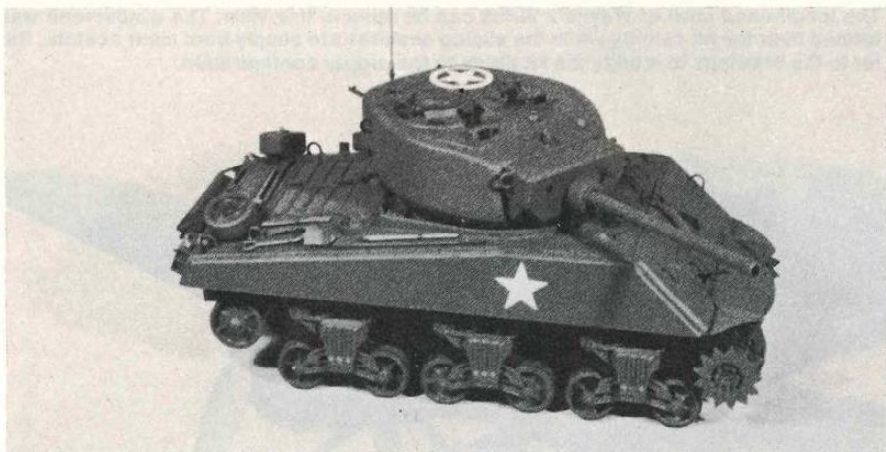


Fig. 10. The Jumbo after painting and decaling. Dave later painted over the white stars to duplicate the painted-out insignia seen in action photos of the M4A3E2.

portions of the tracks. (A caution: Unless you're modeling your Jumbo as a rotting derelict, go light on the rust!) When you're satisfied with the weathering (don't forget the insides of the wheels!), let it dry, then spray on a thin coat of clear flat finish and allow it to dry thoroughly.

I completed my Jumbo with a light coating of sifted barbecue ashes. Strain the ashes from the bottom of your barbecue through an old flour sifter until you have a fine powder, then brush the ashes on the model using a large, soft brush, applying ash most heavily to the lower portions of the

hull, the suspension, and rear. Lay the ashes on thick, then blow the excess off. It may take more than one application, but the results are realistic (and the ashes are a lot less expensive than pastel chalk!). Follow the ashes with a final light dusting of clear flat with the airbrush held a couple of feet away from the model so the spray doesn't dislodge too much ash.

I'm pleased with my Jumbo, and enjoyed the project throughout. I hope you will, too.

FSM

## REFERENCES

- Chamberlain, Peter, and Chris Ellis,



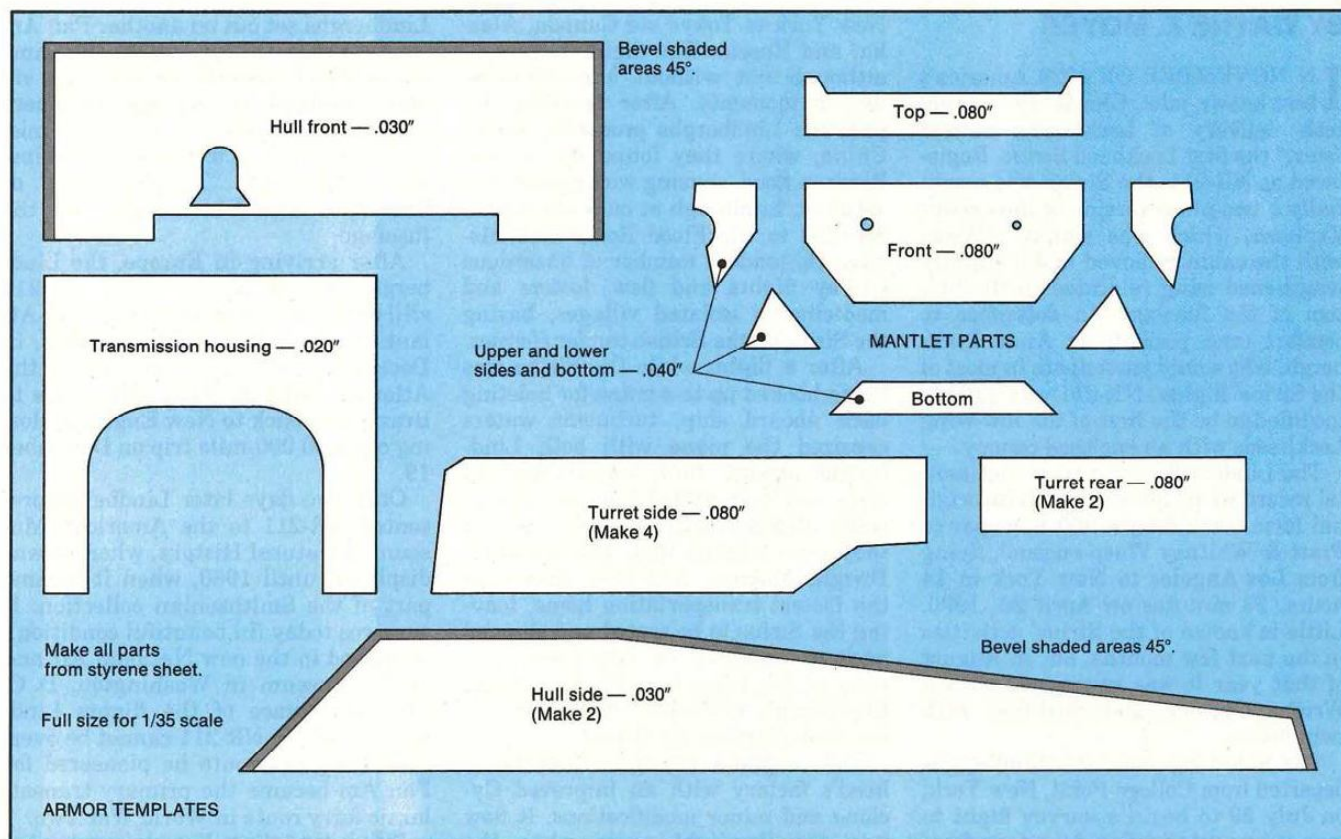
Fig. 11. The external stowage on Dave's Jumbo is about the minimum for U. S. tanks in the E.T.O. near the end of the war. Everything is arranged so that it wouldn't impair the fighting ability of the tank.

*British and American Tanks of World War II*, Arco Publishing Co., New York, 1975.

- Culver, Bruce, *Sherman in Action*, Squadron/Signal Publications, Carrollton, Texas, 1977.

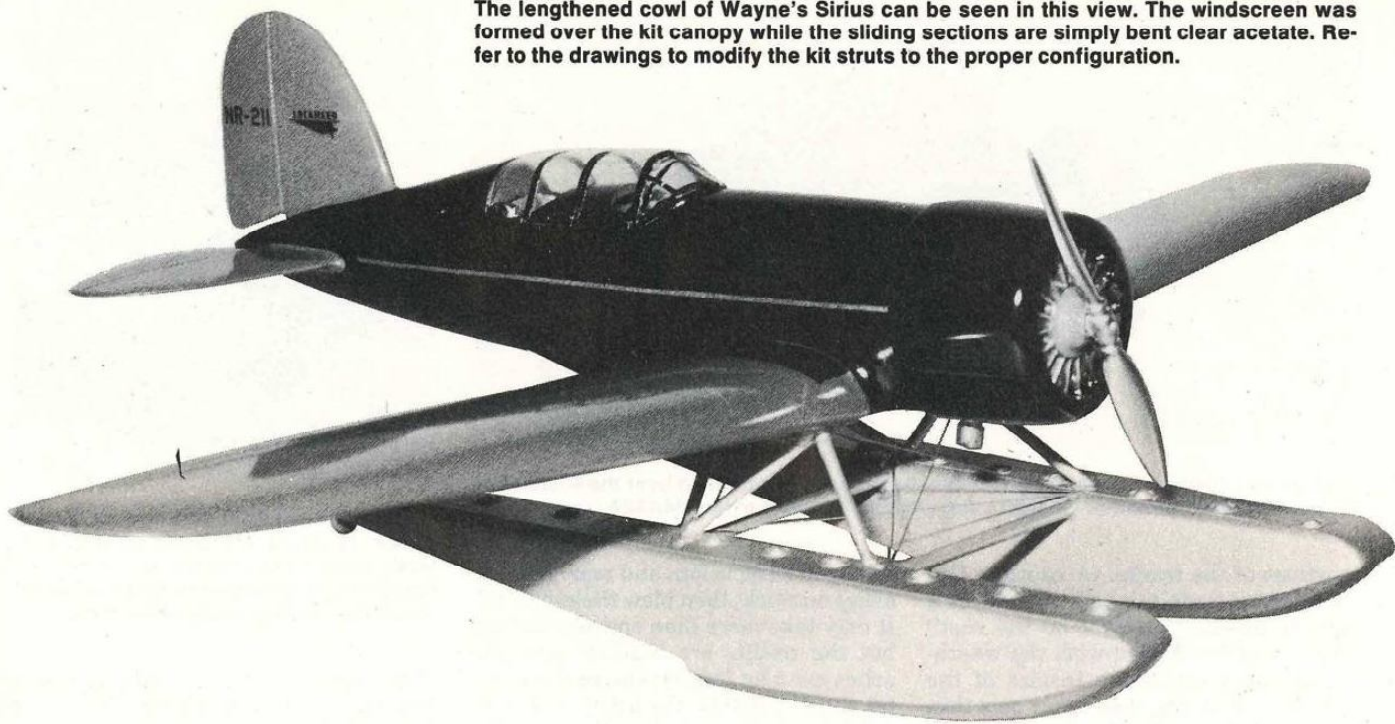
- Hunnicutt, R. P., *Sherman: A History of the American Medium Tank*, Presidio Press, Novato, California, 1978.

- *M4 Sherman, U. S. Medium Tank of World War II*, Bunrin-do Co. Ltd., Tokyo, Japan, 1971.





The lengthened cowl of Wayne's Sirius can be seen in this view. The windscreen was formed over the kit canopy while the sliding sections are simply bent clear acetate. Refer to the drawings to modify the kit struts to the proper configuration.



# Modeling Lindbergh's Lockheed

A "Sirius" conversion of AMT's 1/48 scale Vega

BY WAYNE E. MOYER

**I**N NOVEMBER OF 1929 America's best known pilot, Charles Lindbergh, took delivery of Lockheed's newest "star," the first Lockheed Sirius. Registered as NR-211, the Sirius was essentially a two-place version of the earlier Explorer, which was simply a Vega with the cabin removed and a slightly lengthened wing relocated to the bottom of the fuselage. In deference to comfort (and possibly to Anne Lindbergh, who would participate in most of the Sirius' flights) NR-211 was quickly modified to be the first of the low-wing Lockheeds with an enclosed canopy.

The Lindberghs set a transcontinental record with this aircraft in its original form (including a 450 horsepower Pratt & Whitney Wasp engine), flying from Los Angeles to New York in 14 hours, 23 minutes on April 20, 1930. Little is known of the Sirius' activities in the next few months, but in August of that year it was re-engined with a Wright Cyclone and modified with twin floats.

The following year, the Lindberghs departed from College Point, New York, on July 29 to begin a survey flight to map out a route for Pan American from

New York to Tokyo via Canada, Alaska, and Russia. The flight went well, although not without adrenalin-producing moments. After reaching Japan, the Lindberghs proceeded across China, where they found the Yellow River in flood, causing widespread devastation. Lindbergh at once offered his services to the Flood Relief Commission. He made a number of hazardous survey flights and flew doctors and medicine to isolated villages, basing the Sirius on the British carrier *Hermes*.

After a flight, while the Sirius was being hooked up to a crane for hoisting back aboard ship, turbulent waters capsized the plane with both Lindberghs aboard. Both leaped into the river and were pulled from the muddy water. Before NR-211 could be repaired they were notified that Anne's father, Dwight Morrow, had died; they took the fastest transportation home, leaving the Sirius to be crated and shipped back to Lockheed for rebuilding. The story of this flight is well told in Anne Lindbergh's published diaries and in her book *North to the Orient*.

The airplane emerged from Lockheed's factory with an improved Cyclone and minor modifications. It flew into the limelight again when the

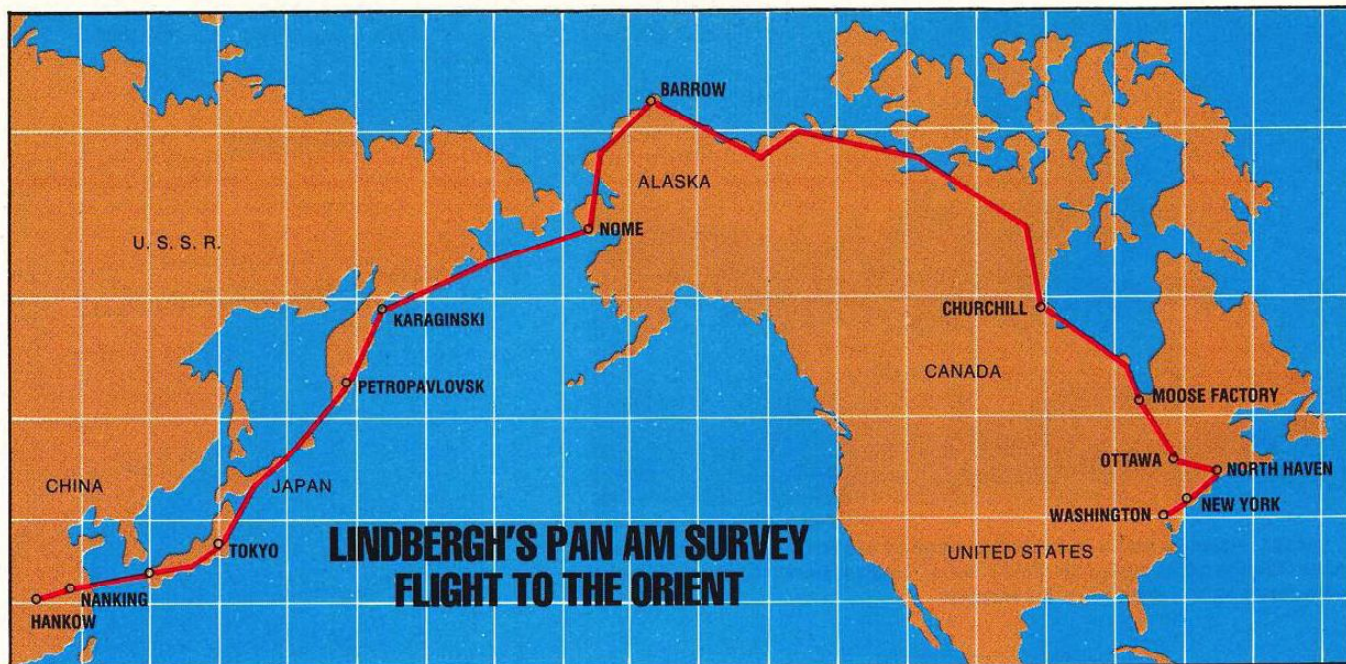
Lindberghs set out on another Pan Am route survey in July 1933, this time across the North Atlantic to Europe via Newfoundland, Greenland, the Faero islands, and Denmark. For this mission, NR-211 had a name; an Eskimo boy had painted "Tingmissartok" or "one who flies like a bird" on the fuselage.

After arriving in Europe, the Lindberghs toured Russia (with NR-211 still on floats), then surveyed a mid-Atlantic route to the Azores. Finally, in December 1933, they again crossed the Atlantic, this time from East Africa to Brazil, and back to New England, closing out a 30,000-mile trip on December 19.

Only two days later Lindbergh presented NR-211 to the American Museum of Natural History, where it was displayed until 1960, when it became part of the Smithsonian collection. It survives today (in beautiful condition), displayed in the new National Air and Space Museum in Washington, D. C. The importance of the flights Lindbergh made in NR-211 cannot be overstated, for the route he pioneered for Pan Am became the primary transatlantic ferry route in World War Two.

**Sirius modeling.** I've always wanted

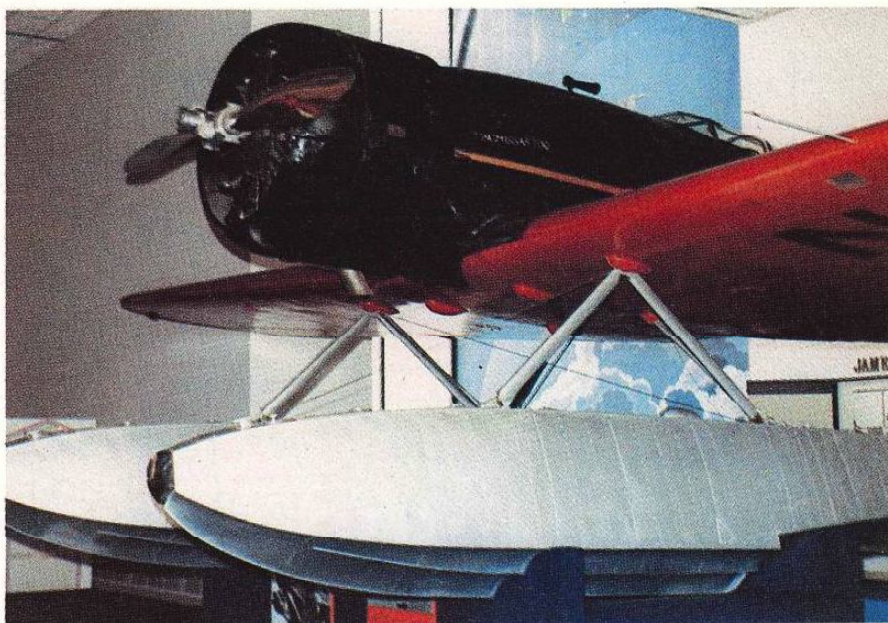




to build either an Explorer or a Sirius, and this ambition was whetted by seeing NR-211 at NASM in May of 1977. When AMT reissued its Vega with floats (kit No. T637), it provided all the pieces necessary to build Lindbergh's Lockheed. As with any conversion, good references are necessary, and the best for this conversion is the IPMS/U. S. A. *Quarterly*, Vol. 3, No. 3, 1968. That issue was devoted entirely to the single-engine Lockheeds, and contained 1/48 scale drawings and step-by-step conversion tips for each variant, using the old Lindberg Vega kit. Also helpful are the 1/48 scale Wylam plans in the February 1956 issue of *Model Airplane News*.

I began by gluing the windows in the fuselage halves, then applied putty over the windows and door outlines, Fig. 1. I taped the fuselage together and used a razor saw to cut away the Vega wing root area from the fuselage halves, then cut cockpit openings using the drawings to establish their locations, Fig. 2. I dry-fit cardboard templates for the forward fuselage bulkheads until I got the proper shape, then I made sheet styrene bulkheads and glued them into the fuselage. Sheet styrene was also used to make the cockpit floor. When the bulkheads and floor were dry, I painted the interior with Humbrol's Natural Wood (MC24) and allowed it to dry, Fig. 3.

I used my bulkhead patterns to make instrument panels for both cockpits, Fig. 4. The seats were made from thin sheet styrene and painted flat aluminum with masking tape seat belts. I made the control sticks from stretched sprue, and added rudder pedals and throttle quadrants from sprue and sheet

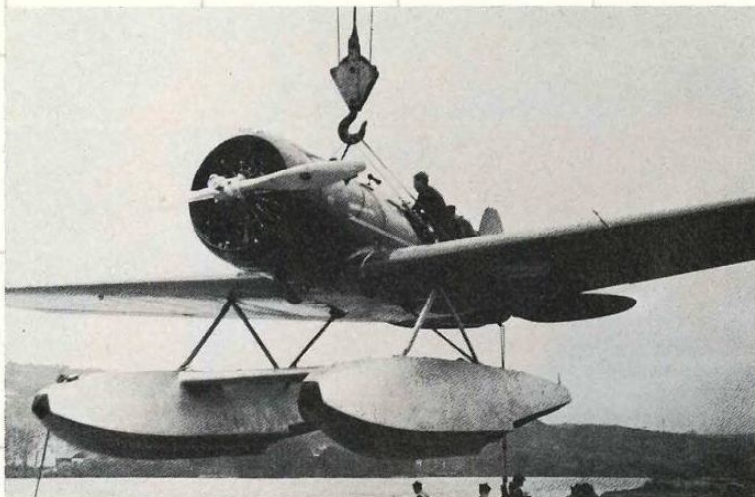


"Tingmissartok" as it appears today, on display in the National Air and Space Museum, Washington, D. C. Note the glossy black fuselage and orange wings.



Wayne's model of Lindbergh's Lockheed Sirius was converted from the AMT Vega kit. Although there is little similarity, the Sirius used the same basic fuselage and wing structure of the earlier, high-wing Vega.

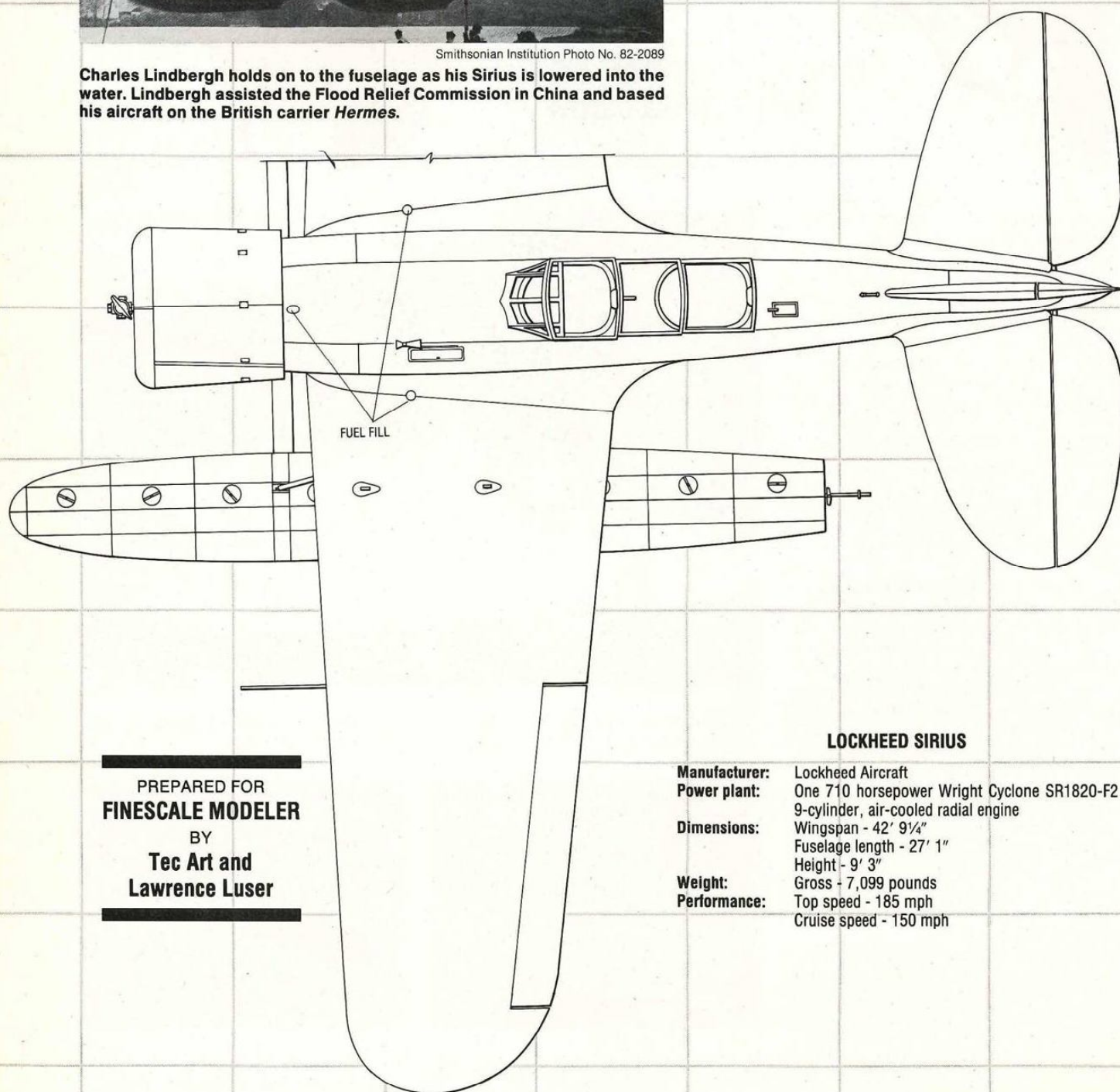




Smithsonian Institution Photo No. 82-2089

Charles Lindbergh holds on to the fuselage as his Sirius is lowered into the water. Lindbergh assisted the Flood Relief Commission in China and based his aircraft on the British carrier *Hermes*.

1/48 SCALE

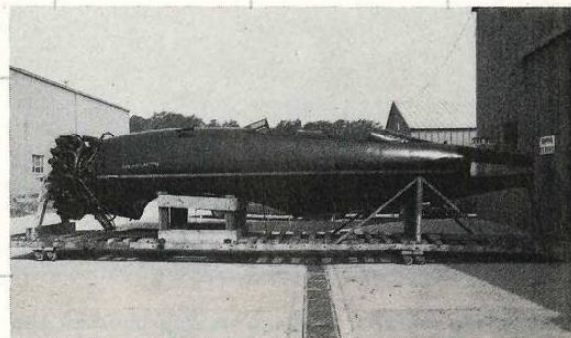
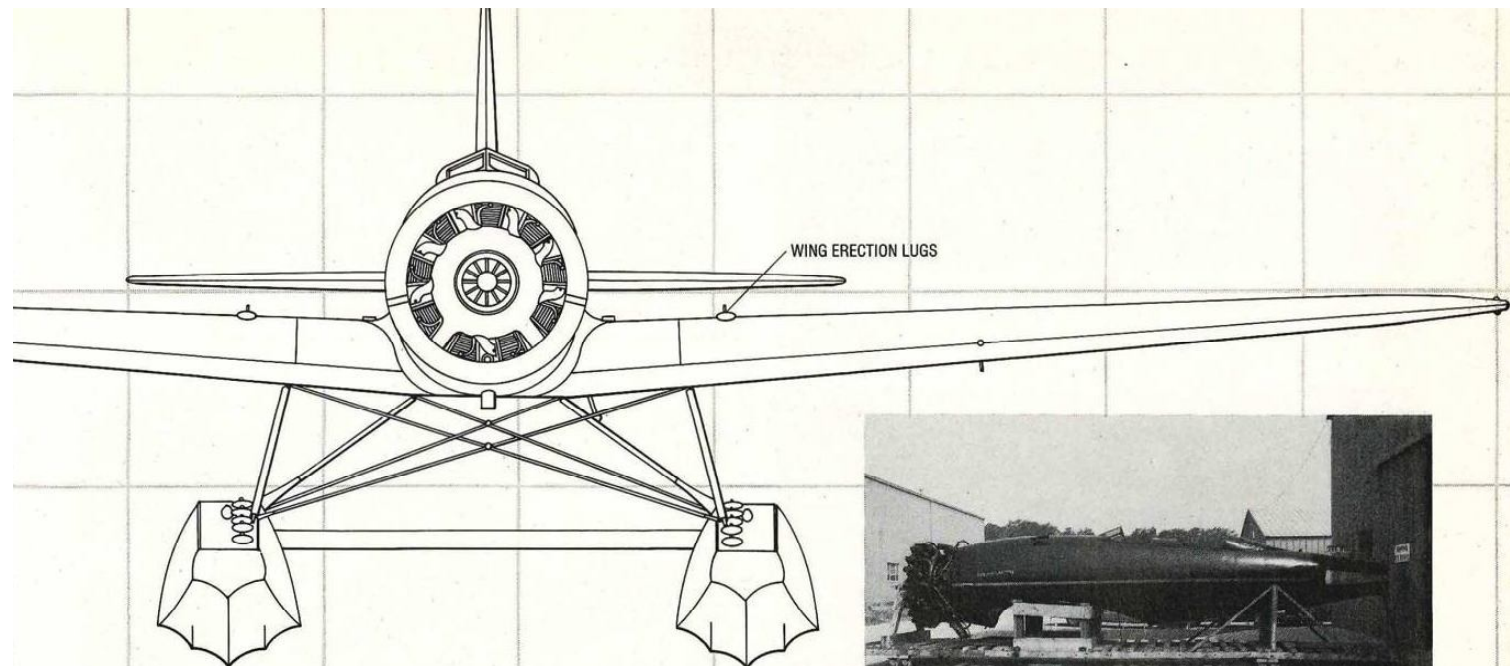


PREPARED FOR  
**FINESCALE MODELER**  
BY  
**Tec Art and  
Lawrence Luser**

### LOCKHEED SIRIUS

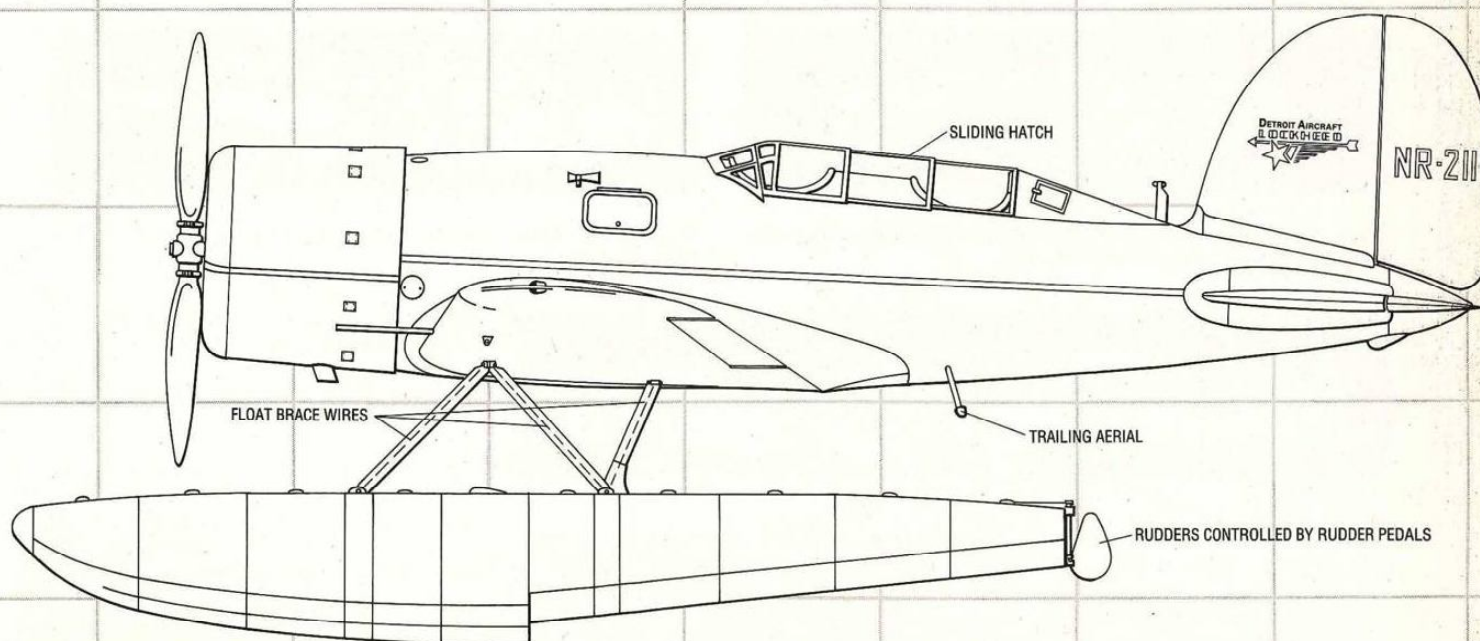
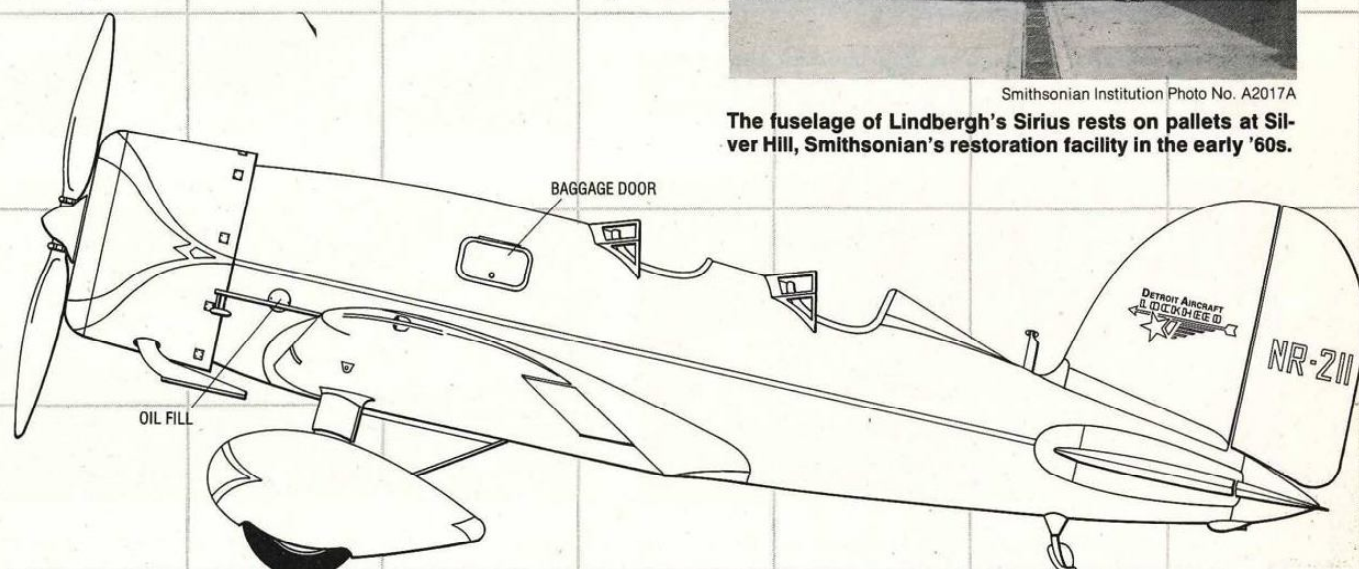
**Manufacturer:** Lockheed Aircraft  
**Power plant:** One 710 horsepower Wright Cyclone SR1820-F2  
9-cylinder, air-cooled radial engine  
**Dimensions:** Wingspan - 42' 9 1/4"  
Fuselage length - 27' 1"  
Height - 9' 3"  
**Weight:** Gross - 7,099 pounds  
**Performance:** Top speed - 185 mph  
Cruise speed - 150 mph





Smithsonian Institution Photo No. A2017A

The fuselage of Lindbergh's Sirius rests on pallets at Silver Hill, Smithsonian's restoration facility in the early '60s.





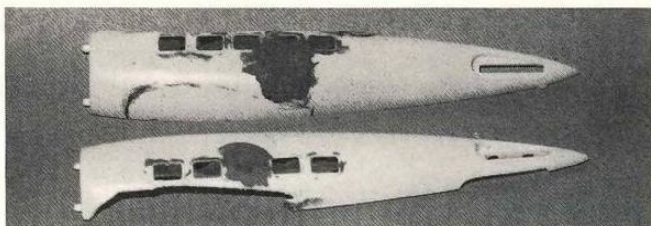
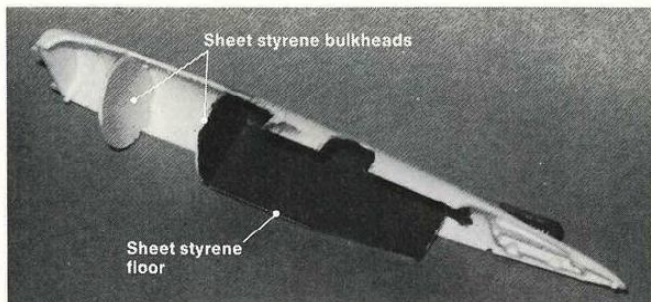


Fig. 1. The Vega windows were glued in place and covered with putty. Note putty over door outline.



Fig. 2. The fuselage halves were taped together, the kit wing root removed, and the rear cockpit opening cut out.



(Above) Fig. 3. Wayne made the fuselage bulkheads and cockpit floor from sheet styrene. (Right) Fig. 4. Instrument panels, seats, throttle quadrants, and pedals were made from sheet styrene. The rear cockpit opening is already cut out.

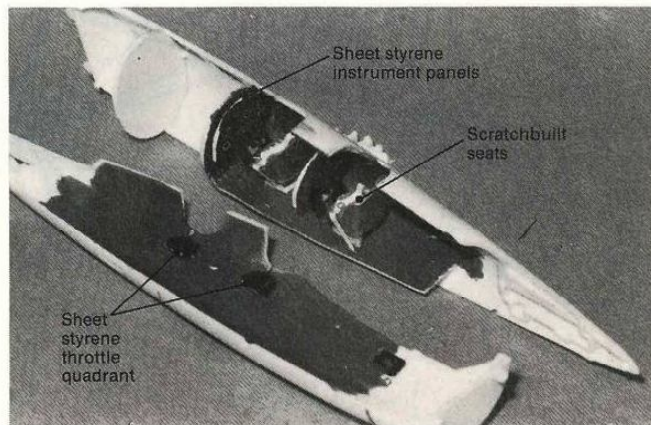


Fig. 5. The fuselage halves were glued together and the old wing root planked over with strips of styrene.

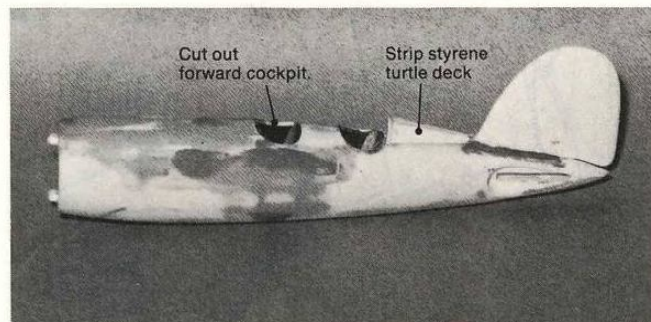


Fig. 6. The forward section was sanded smooth and the forward cockpit opening cut out. Turtle deck was built from styrene strips.

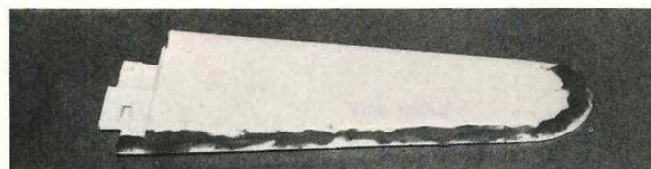


Fig. 7. Each wing half was assembled separately, then the seams were filled and sanded smooth.

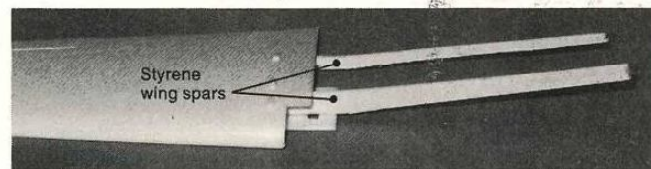


Fig. 8. Wing spars made from sheet styrene were glued into the right wing and left to dry.

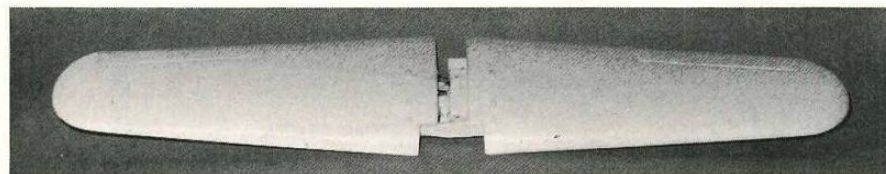


Fig. 9. The assembled wing. Check span with plans before the glue sets.

styrene. The Wylam plans were invaluable for locating the instruments, seats, and controls.

I carefully marked the wing location on one fuselage half before the fuselage

was assembled. After the interior was dry, I glued the fuselage halves together. When this joint was dry, I placed sheet styrene planks over the original wing root opening, Fig. 5. To

provide additional strength, I made a filler from sheet styrene shavings dissolved in Plastic Weld.\* This was applied to the planked area instead of putty since it literally welds the entire structure together. Be sure to let this filler dry at least a week before filing

\*Plastruct, 1161 Monterey Pass Road, Monterey Park, CA 91754.



and sanding. Next, I added the vertical tail and put the fuselage aside.

The forward fuselage was filed, sanded, filled, and sanded until I obtained the correct, smooth contours. I finished the forward cockpit opening and added a bulkhead and planking for the turtle deck behind the rear cockpit opening, and filed and sanded it to shape, Fig. 6.

**Assembling the wing.** I made front and rear wing spars using the front view of the drawings, then modified them to allow for the thickness of the upper and lower wing halves. I glued the wing halves together first, Fig. 7, puttied the seams on the underside of the wing, and sanded them smooth. Then I inserted the spars and bonded them with tube glue for extra strength, Fig. 8. The Sirius had a longer wing than the Vega; 42' 9 1/4" instead of 41'. To increase the span, I spaced the wings 1/16" apart on the spars, Fig. 9. Then I blocked the wing while it dried to ensure proper dihedral and lack of twist, and let it dry for a couple of days.

**Meanwhile...** With the fuselage and wings set aside to dry, I assembled the floats and horizontal tails, filling and sanding as necessary. Although the floats of Lindbergh's Sirius were not exactly the same as those included in the AMT Vega kit, I didn't think the minor differences were worth the extra conversion work. I sprayed the floats and float struts with Pactra Flat Aluminum, then gave them a light coat of clear gloss.

The cowl of the Sirius was slightly longer than the Vega cowl and extended back almost to the leading edge of the wing. I lengthened the kit cowl approximately 1/16" by cutting that much off a second Vega cowl. The four pieces were glued together and allowed to dry. Even though the cowl was longer, the fuselage of Lindbergh's Sirius was 5" shorter than the Vega. This difference was taken care of when I used a Dremel Tool to remove the flat mounting brackets inside the cowl and to thin the rear edges of the cowl to get it to slide back further on the fuselage.

I scavenged an R-1820 Cyclone engine and controllable pitch prop from an old Lindbergh Curtiss F11C-2 kit (No. 460). I painted the engine and sprayed the interior of the cowl flat aluminum. After the exterior was sanded smooth, I placed the engine inside the cowl, modifying it so I could mount the prop after the model was completed.

**Relocating the wing.** Next, I cut out the wing opening in the fuselage with a razor saw and a knife, Fig. 10. The wing was glued into place with tube glue and allowed to dry for several days. I used scrap sheet styrene from vacuum-formed kits to fill gaps on the

## IN OHIO...

...Adult modelers  
shop with us.

ARMOR • AIRCRAFT  
DECALS • BOOKS  
TOOLS • MINIATURES  
FOREIGN MAGAZINES



STRETE HOBBIES



3655 Sullivant St., Columbus, OH 43228

## ARROW HOBBIES

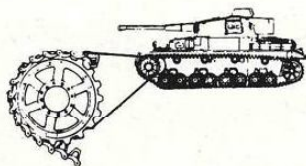


2273 Hazellynn Place  
North Vancouver, B.C.  
Canada V7J 2R9

## DISCOUNT PRICES

- Aircrafts • Vacuforms
- Armor • Decals
- Ships • Paint
- Science • Books
- Fiction

CATALOG \$1.50



## ARMOR IN DETAIL

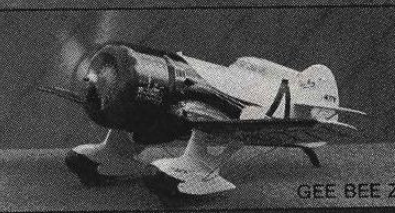
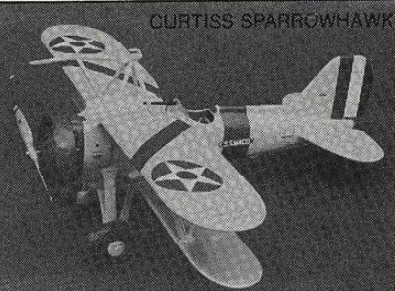
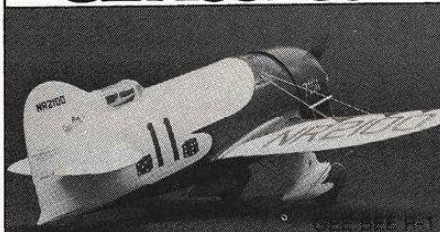
IF YOU'RE INTO ARMOR...  
.....WE'RE INTO DETAIL

- Tamiya
- ESCI
- Italeri
- DCS-MDA
- Historex
- Deauville
- Nichimo
- Nitto
- Armor In Detail
- The Rock Quarry
- Micro System
- & Much, Much More

1238 Poppyseed Drive  
New Brighton, MN. 55112

New  
Expanded  
Catalog \$2.50

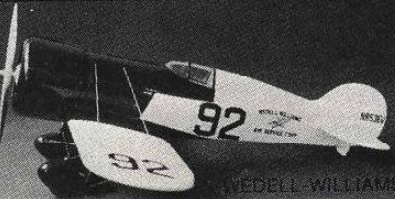
## CLASSICS!



1/32 scale plastic model kits of Golden Age classic aircraft! Colorful, highly detailed miniatures. Send \$1 for fully illustrated catalog of these and other kits and accessories.



DEPT. FSM  
181 PAWNEE ST.  
SAN MARCOS,  
CALIFORNIA 92069





Starts at \$44.95 and it's on its way!



**THE "BENCH GRINDER"**

Grinds... Buffs... Drills... Polishes... It's \$44.95!

Ruggedly built, featuring a Flexible Shaft to get you into those hidden areas. Variable in speed, 6,000 to 10,000 rpm. Your Workshop just can't function without the basics.

**POLK'S Model-Craft HOBBIES** Dept. 5335  
346 Bergen Ave., Jersey City, N.J. 07304 Phone: (201) 332-8100

POLK'S 1985 CATALOGS really help. \$3.00

Dial us with your Order. TOLL-FREE: 1-800-225-POLK

Please include \$5.00 Shipping & Handling charge. (Other POLK's Tools may be ordered at the same time. Major Credit Cards accepted. have Account Number handy. Personal & Certified Checks also accepted)

**MICHIANA**  
— YOUR SEARCH  
IS OVER —  
**HOBBYLAND**  
4343 Lincolnway West  
South Bend, Indiana 46601  
219-287-0180  
— For all your hobby needs —  
Armor - Aircraft - Ships  
Decals - Tools - Books & Mag.

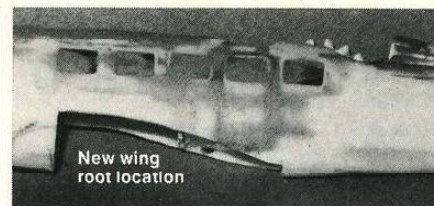


Fig. 10. The wing root area was cut out with a knife and shaped with a file, dry-fitting occasionally.

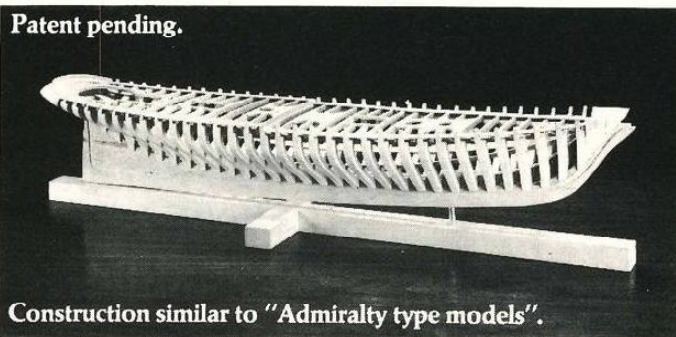


Fig. 11. After all fuselage work is done, glue the wing in place. Fill the lower surface gaps with sheet styrene and build up wing fillets with putty.

## HAVE YOU EVER SEEN A PLANK-ON-FRAME KIT LIKE THIS?

Patent pending.

And, have you always wanted a wooden ship model kit that builds just as real ships were built?



Construction similar to "Admiralty type models".

**BLUEJACKET HAS IT, AND LOTS MORE!** Our customers tell us our cast (of Britannia) ship fittings are the finest available anywhere. And we have a full line of highest quality solid hull ship model kits featuring both classic and unusual ships.

Just send \$2.00 (refundable with your first order) for our current catalog of fittings, kits, tools, plans, books and supplies. You'll be glad you did.

**BLUEJACKET**  
SHIP CRAFTERS  
AMERICA'S OLDEST MODEL MAKERS

P.O. Box 533-FSM, Shelton, CT 06484

bottom of the wing and around the leading edge, Fig. 11, then faired the plastic in with Squadron Green Putty.\* The large wing fillet was built up with several layers of putty, and while waiting for it to dry, I added the horizontal tails and filled the seams.

**Painting.** After all the seams, fillets, and fairings were sanded smooth, I attached the cowling and washed the model. Next, I primed the model and filled minor blemishes, then sanded them smooth and applied a second coat of primer. I sprayed gold stripes down the fuselage sides and masked them. The wings and tail were sprayed a red-orange to match my photos of the real airplane taken at the Smithsonian. I masked the wings, tail, cockpits, and engine with tissue and sprayed the fuselage gloss black and once again set the model aside to dry for several days.

After the paint had dried, I added the canopy. The kit canopy was used to make the forward windscreen, while the fixed center section and sliding hatches were made from clear sheet plastic. I added decals and attached the floats. I used stretched sprue for the float braces. The aircraft name "Ting-missartog" was hand painted on the forward fuselage and the prop added to finish off the model.

The finished model is a pleasing replica of an aircraft that will probably never be kitted. The Lockheed Sirius deserves a better fate; after all, Lindbergh flew it much longer and much farther than his famous Ryan "Spirit of St. Louis."

**FSM**

\*Squadron Mail Order, 1115 Crowley Drive, Carrollton, TX 75006.

**METALIZER™**

THE ULTIMATE IN MODEL METALIZING FINISHES

**NEW IMPROVED FORMULA**

A unique product for unique models. From the people who invented the world's first plastic model metalizing finish. No other metalizing finish offers you the versatility of Metalizer. For all types of aircraft, car, ship, train, armour and science fiction models. Airbrush on and buff to a brilliant sheen in minutes. Metalizer is a tough and durable waterproof finish. With 13 metal shades, sealer and 2 dayglo colors to choose from.



1. ALUMINUM
2. STEEL
3. MAGNESIUM
4. TITANIUM
5. GUN METAL
6. EXHAUST
7. SEALER
8. DAYGLO-RED
9. DAYGLO-ORANGE
10. DARK ANODINIC GREY
11. METALLIC BLUE
12. GOLD
13. BURNED METAL
14. \*COPPER
15. \*BRASS
16. \*ALUMINUM-NON BUFFING
17. \*THINNER
18. \*ALUMINUM PLATE IN AEROSOL CANS
19. \*NEW FOR 1983

**METALIZER PRODUCTS**  
1019 BONITA ST.  
TUSTIN, CA 92680

— SEND STAMPED & SELF-ADDRESSED ENVELOPE FOR METALIZER BROCHURE —  
Dealer Inquiries Invited



In Business 19 Years  
Serving the San Francisco  
Bay Area

★ ★ **AMERICAS LARGEST HOBBY SHOP ★ ★**

## **SAN ANTONIO HOBBY SHOP, INC.**

■ HUGE BOOK AND MAGAZINE SELECTION ■ AIR  
BRUSHES, TOOLS, DECALS ■ VACUFORMS, DIE CAST  
CARS ■ TRAINS — LGB, LIONEL, HO, N, Z GAUGE ■ R/C  
AIRCRAFT, BOATS, CARS, HELICOPTERS ■ DOMESTIC AND  
FOREIGN AIRCRAFT, SHIPS, ARMOR KITS, CARS

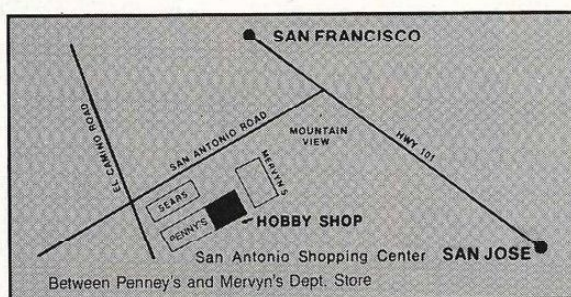
✓ **LARGE, WELL-STOCKED**  
✓ **WORTH THE TRIP!**

HOURS — Mon. thru Sat. 9:30-5:30

Thurs. night till 9:00

2550 West El Camino, Mtn. View CA. 94040

**(415) 941-1278**



## **Fine Detailing Demands the Finest... BADGER**

The Badger Model 150 Air-Brush is extremely versatile and recommended for use by professional modelers. Each Badger Air-Brush part is machined with exacting precision, inspected by highly skilled craftsmen and assembled carefully by hand.

The 150 Air-Brush is suitable for left or right handed modelers because of the bottom feed feature. With a choice of three interchangeable head assemblies you can spray from a fine pencil line to 2" wide. Ask for fine Badger products at your local hobby, craft or art store or write Dept. FS 84 for a full color catalog BA 300 Vol. 7. Please enclose \$1.00 to cover cost of postage and handling.



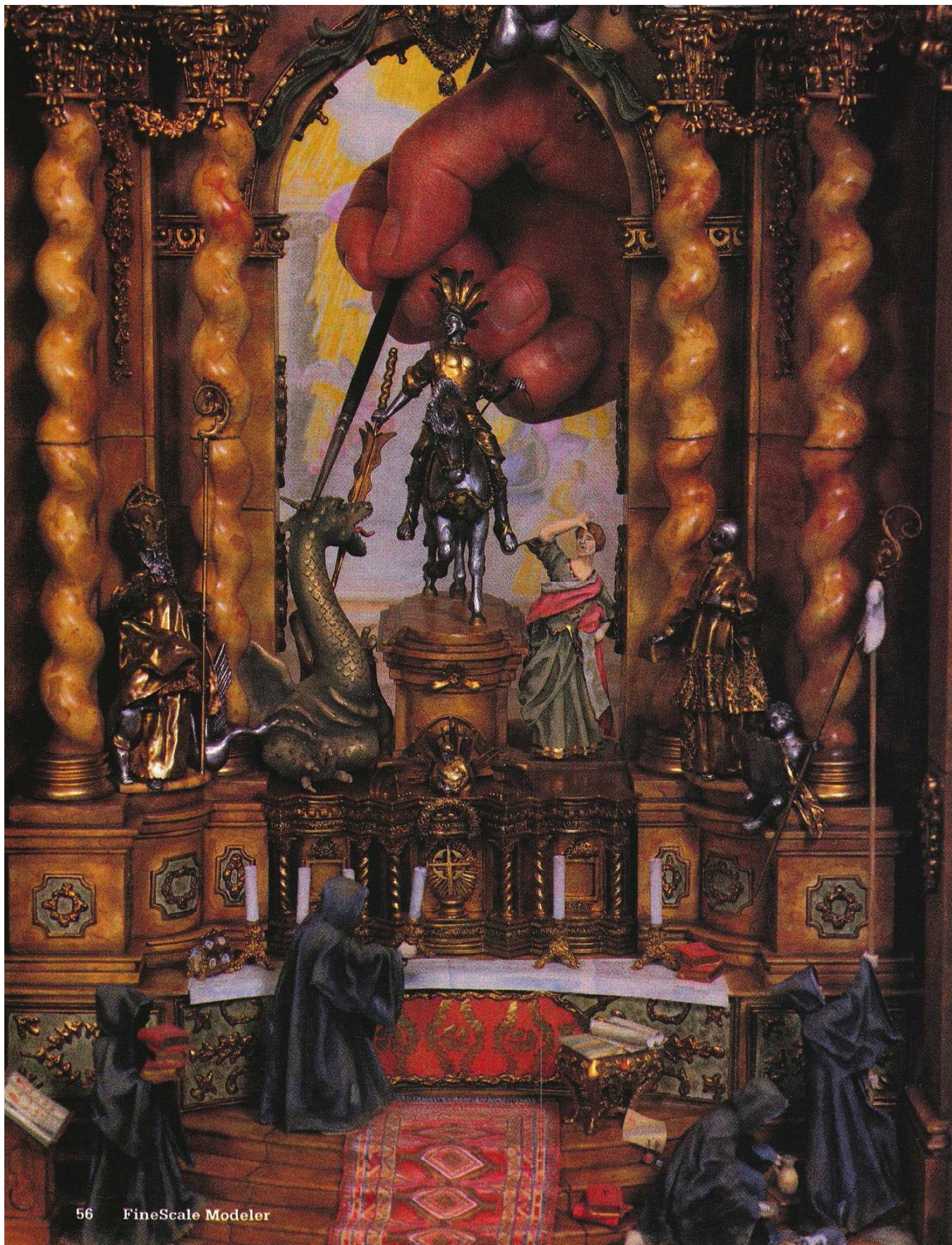
**BADGER AIR-BRUSH CO.**

9128 W. BELMONT AVE. FRANKLIN PARK, IL 60131

Dist. in Canada by: HOBBY INDUSTRIES - 24 Ronson Drive - Rexdale, Ontario M9W 1B4











All photos, Roland Patterson

## FSM SHOWCASE SPECIAL FEATURE

# The high altar of the Benedictine Abbey, Weltenburg, Germany

*Ray Anderson's stunning 1/25 scale diorama*

**R**AY ANDERSON of Manhattan Beach, California, told FSM that he wanted to create something extraordinary for his 100th diorama. "My selection was the high altar of the Benedictine Abbey circa 1720 in Weltenburg, Germany, on the Danube," he said. "There wasn't even a close second choice."

While we usually don't publish in-progress photos of models featured in FSM Showcase, we were so impressed by Ray's work that you'll find four such photos of his Benedictine Abbey diorama on page 58.

For this project, Ray said he knew he would use most of the techniques he learned while building previous dioramas. "The natural lighting in the Abbey is dramatic and ideal for a boxed diorama," Ray explained. "I prefer open scenes such as this that can also be enjoyed from a distance. Bringing the details up to the front glass makes the viewer feel a part of the scene. This was accomplished by using the efficient miniature fluorescent lights to overpower the room lighting."

"I prefer to keep the outer case as small as possible, so many of the clearances between the scene and the case are less than 1/8". In designing the outer case, the gray marble molding from the interior was carried around to the exterior. The front face was copied from the main arch separating the high altar from the body of the church. The peaked roof and shingle concept were taken from the building exterior.

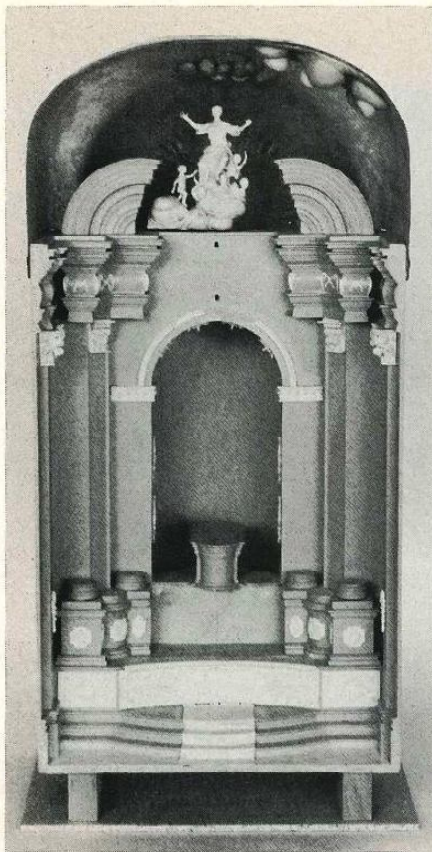
"The design was further complicated since I did not want any exposed joints. The design had to be worked out in greater detail than usual, as there was little room for error with the minimum clearances. The inner box assembly is installed from below. Incidentally, I always use metric measurements as they simplify the design and construction. All of the components were scratchbuilt and to the proper scale based on the drawings and photos received from the Abbey."

The base of the diorama is about 12 inches square. The figures are Historex conversions — enlarged to about 60 mm — using the typical shim-and-wedge technique. Ray made the clothing from Kleenex coated with dissolved plastic.

According to Ray, "The dragon and clouds were sculpted

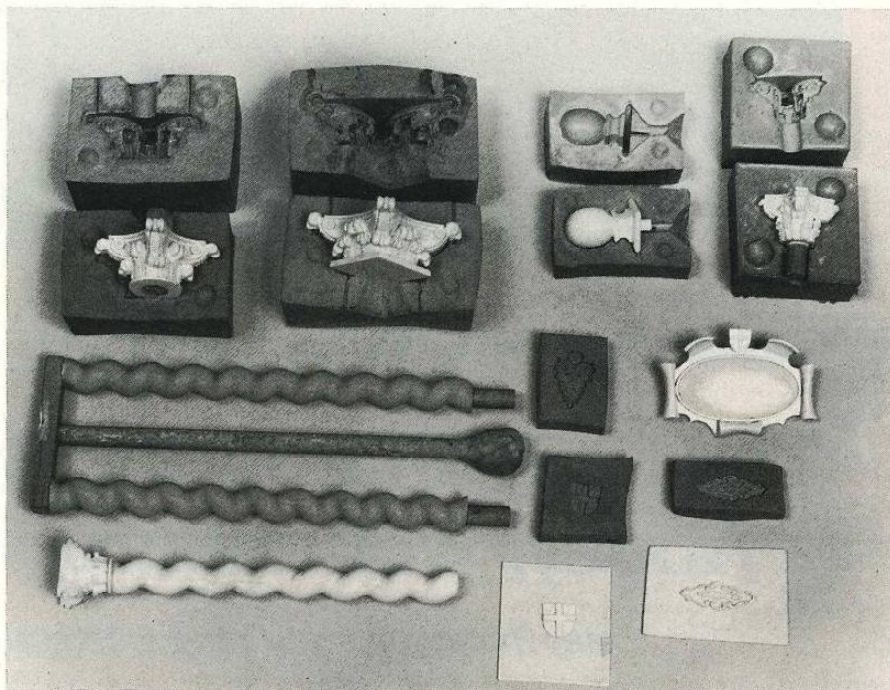
(Left) Ray created this striking scene of the high altar of the Benedictine Abbey in Weltenburg for his 100th diorama.





from A+B epoxy putty. The dragon was coated with dissolved polystyrene so that fine details such as claws and teeth could be made from sheet plastic.

"Many of the details were cast in epoxy using RTV molds. Most of the patterns were made from polystyrene. The rear apse and the ceiling are polyester layups on wooden molds. The shingles are a red flexible polyester on one layer of fine fiberglass cloth." Ray sawed the shingles from the sheets.



The interior scene with its vaulted ceiling (top left) slides into the furniture-like outer case (left) from below. It's a tight fit. (Top right) The figures are conversions of Historex 54 mm military figures, enlarged to about 60 mm tall. Ray made the clothing from Kleenex coated with dissolved plastic. (Above) Many of the ornate, repetitive details were cast in epoxy using RTV molds. Most of the patterns are styrene.

The outer case was made from 4.5 mm birch-faced, mahogany-core plywood because it is stable and takes an excellent finish with little effort. "The gray marble molding," Ray said, "was made from basswood for the exterior and the softer jelutong for the interior. The molding was made using a Record multiplane, a modern version of the old Stanley molding plane. It has 36 different blades so practically any molding shape can be duplicated by hand. A precision Inca table saw was used for the jointing. The arched front molding was first cut in narrow circumferential strips using a Hegner jigsaw, then the

individual pieces were cut to the proper shape and glued back together."

Ray explained that he used Humbrol paints "because the colors in boxed dioramas must be dead flat. Rose gold and Testor silver were used. A satin varnish was applied to the simulated marble surfaces. All wood components were primed with gray auto lacquer. The three 4-watt fluorescent tubes were tinted with acrylics."

Ray has been a full-time modeler since 1972; most of his boxed dioramas depict the early American West. He is a Grand Master of the Miniature Figure Collectors of America. **FSM**



# Here's your complete guide to airliner modeling!

## BUILDING MODEL AIRLINERS

By David Minton

\$6.95  
12088

- Welcome to  
airliner modeling
- Tools and materials
- Assembling the model
- Painting the model
- Applying decals
- Upgrading and converting models

### **B**UILDING MODEL AIRLINERS

is a superb new book that will show you how to build accurate scale models of airliners. In 48 pages, you'll find concise yet complete instructions on how to assemble, paint, and decal plastic airliner kits. You'll learn where to find the reference materials you need for airliner modeling, and you'll discover where to obtain and how to use specialized airliner modeling products – such as a full range of colorful airliner decals. And in BUILDING MODEL AIRLINERS, you'll also find information on upgrading and converting airliner kits. Add this remarkable new book to your modeling library – ask for BUILDING MODEL AIRLINERS, \$6.95, at your favorite hobby shop, or use the coupon below to order direct today!

#### KALMBACH BOOKS

1027 N. Seventh Street, Milwaukee, WI 53233

DEPT. 38691

Enclosed is \$\_\_\_\_\_ for \_\_\_\_\_ copies of BUILDING MODEL AIRLINERS at \$6.95. Include for postage and handling: U. S. \$1; foreign \$1.50. Wisconsin residents add 5 per cent sales tax.

Name \_\_\_\_\_

Street \_\_\_\_\_

City, State, Zip \_\_\_\_\_

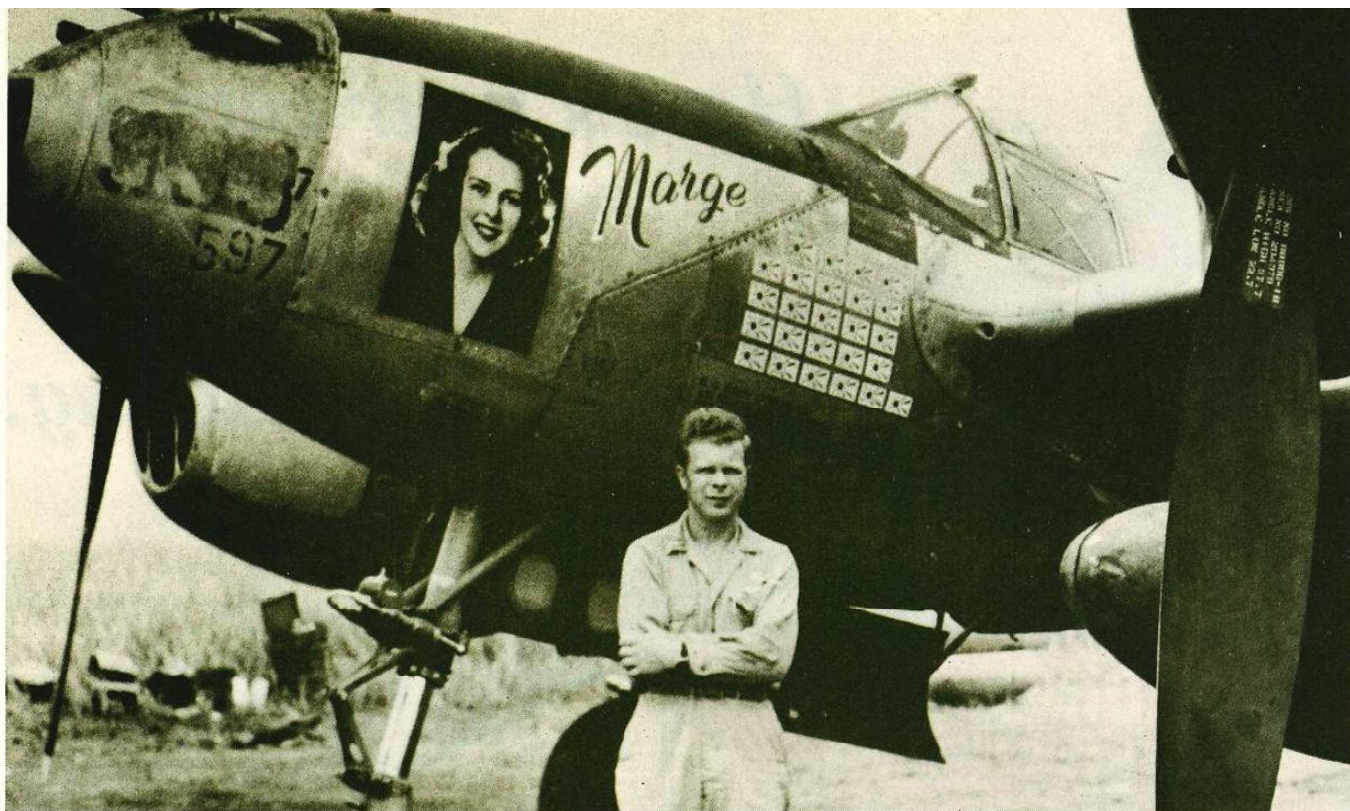
Charge to: ☐ MASTERCARD  
☐ VISA

Exp. Date \_\_\_\_\_

Card Number \_\_\_\_\_

Signature \_\_\_\_\_





Jim Bong collection

Richard Bong beside "Marge." Note the painted-over numbers on the nose, victory flag tally, and lack of blade antenna. Shortly after this photo was taken "Marge" was wrecked. Bong went on to score 40 victories — highest score by an American ace.

# Modeling "Marge"

A 1/32 scale P-38 presentation model with very special markings

BY PAUL BOYER

**W**HEN WORLD WAR TWO aviation hero Richard I. Bong left the South Pacific Theater December 29, 1944, he was the top American ace — with 40 victories over Japanese aircraft. By the end of the war no other American fighter pilot could match his score. For his heroics, Bong received the Congressional Medal of Honor.

After returning stateside, Bong married his sweetheart, Marge, on February 10, 1945, and was assigned to help test the new Lockheed P-80 Shooting Star, the first U. S. jet fighter to see squadron service. Ironically, after surviving two years of air-to-air combat, Bong died when his P-80 flamed out on takeoff from Burbank, California, on August 6, 1945.

Our local chapter of the International Plastic Modelers Society in Milwaukee, Wisconsin, is named for Richard Bong. At one of the club's monthly meetings Richard's brother Jim spoke and showed photos and movie footage

of the famous ace. Afterward, club members asked me to build a model to be presented to Jim at the club's annual banquet.

The job appeared easy since Richard Bong's P-38, "Marge," is familiar to most modelers who build WWII aircraft. The members of the chapter and I agreed that the Revell 1/32 scale P-38 would make the most impressive replica for the presentation, and the first release of this kit contained markings for "Marge."

**Modifying the kit.** There were only two slight changes made to the kit; the spoked nosewheel was changed to a solid disc wheel visible in the photos of the actual aircraft by filling between the spokes with gap-filling super glue and sanding it smooth. The only other difference I could find was that Bong's plane did not have a blade antenna under the nose.

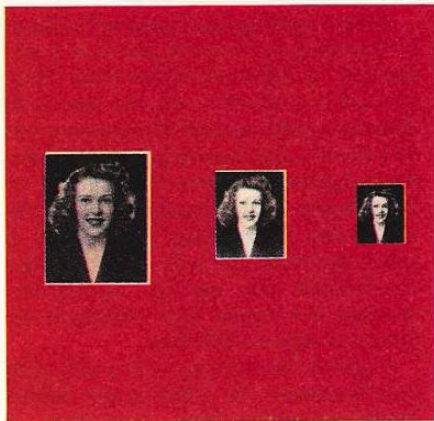
I built the rest of the kit out of the box. Since the model was to be mounted

to a base by its landing gear, I reinforced the main gear struts by adding gap-filling super glue fillets at all the intersections of struts and braces. This stiffened the landing gear considerably without requiring wire reinforcements.

**Improving the markings.** Checking through my book collection and photos borrowed from Jim Bong, I discovered that the serial number in the kit decals (and several other custom decal sheets in other scales) was incorrect. The data block, visible in a closeup photo of "Marge," revealed that this was P-38J-15-LO, A. A. F. Serial Number 42-103993, not 42-104380.

The most distinctive marking on the plane wasn't painted on. In 1944 Richard had a small photo of his fiancée, Marge, blown up, tinted, and pasted on the left side of the plane's nose. Many photos of this aircraft were taken for publicity purposes, some with Bong and a crew chief around the nose. All photos of "Marge" show 25 miniature



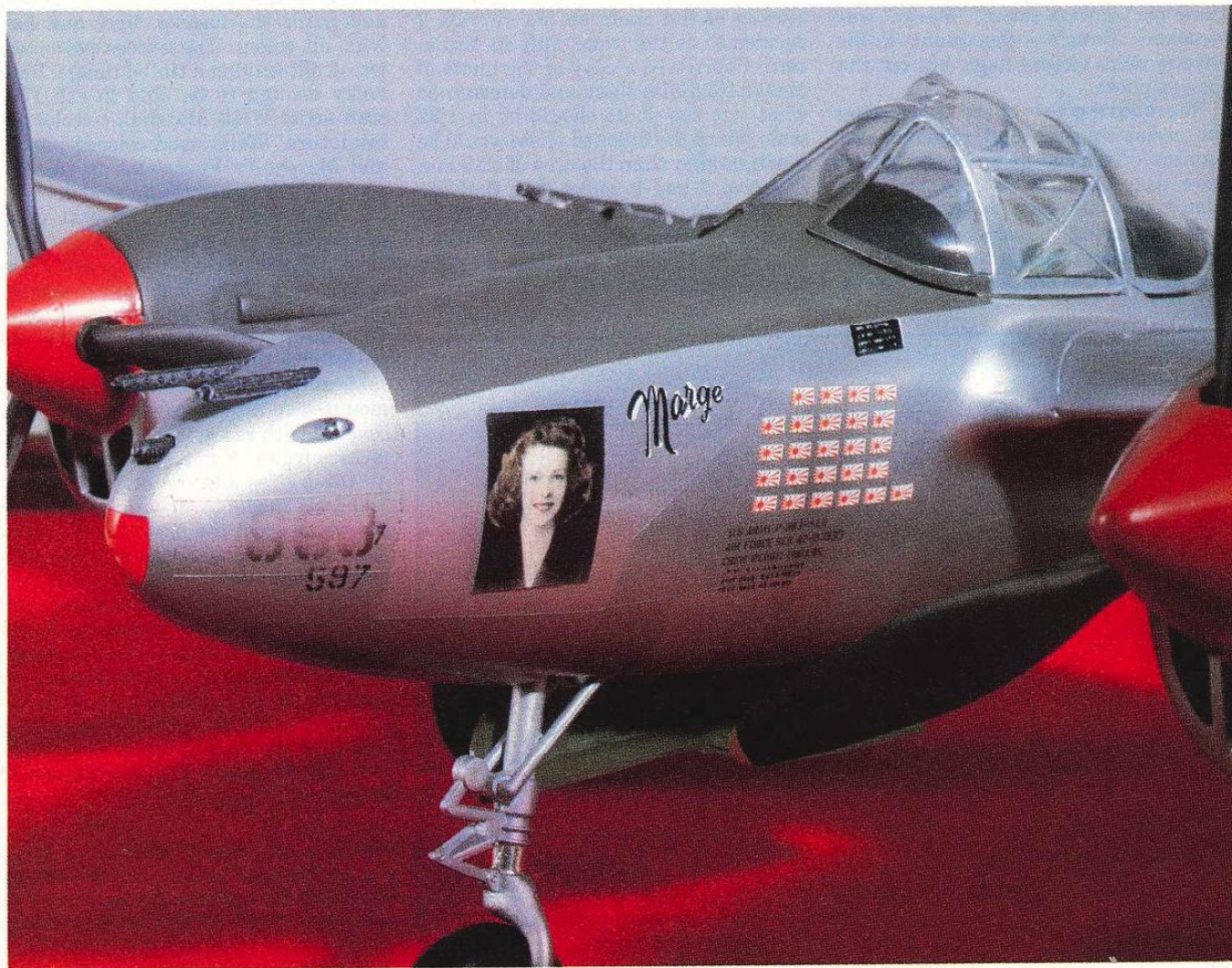


**Fig. 1.** These reductions of Marge's tinted portrait are (left to right) 1/32, 1/48, and 1/72 scales.

(Right) Revell's 1/32 scale P-38 in Richard Bong's markings is mounted on a velvet-covered acrylic base inside a picture frame. The photo of Marge was used to make the miniature on the model. (Below) This closeup shows Richard Bong's personal markings. Note the tinted miniature photo cemented to the nose of the model. The victory flag tally was reduced to 25 to agree with photos of the actual aircraft.



All photos, FINESCALE MODELER: Paul A. Erier unless otherwise credited.







Jim Bong collection

Major Richard Bong in "class A" uniform with the Congressional Medal of Honor around his neck. Other decorations include the Distinguished Flying Cross with 6 oak leaf clusters (repeat awards), and the Air Medal with 12 oak leaf clusters.

Japanese flags, victories Bong scored flying many P-38s, but shortly after these photos were taken, "Marge" was wrecked. Bong's subsequent P-38s showed more victory flags, but not the famous photo.

**Reproducing the photo.** Correcting the serial number and reducing the number of victory flags on the model were easy changes (I used numbers from Microscale sheet No. 72-25). However, producing a realistic miniature photo of Marge presented a problem. The decal of the photo included in the



Fig. 2. The size of the image was measured by projecting it on a frosted flexible ruler before film was loaded in the camera.

Revell kit was a crude, high-contrast black-and-white reproduction not up to the quality of the rest of the model. But, how could I improve on it?

Since Richard Bong had pasted a blowup of the photo on his aircraft, I decided to do the same, only in miniature. I borrowed a copy of the photo of Marge from Jim Bong and determined what size the photo should be in 1/32 scale. Since the finished photo would be much smaller than the area of a 35 mm negative, I had to shoot it so that the image size on the negative was exactly the size I needed for the model. While I was at it, I figured the sizes for 1/48 and 1/72 scales too, Fig. 1.

Before loading the camera, I placed it on a tripod, pinned the photo to a wall, and set up lights on either side. Then I opened the shutter, set the maximum aperture, and opened the camera back so I could view the image on a flexible, frosted, see-through ruler, Fig. 2. I varied the size of the image for the different scales by moving the camera toward and away from the picture. Once I established the correct distances, I marked the tripod legs' positions with pieces of tape on the floor.

I loaded the camera with a roll of Kodak Panatomic-X, a fine-grain, ASA 32 black-and-white film, and shot the photos. I had the film processed and contact (same size) prints made on lightweight, matte-surface enlarging paper (Kodak Polyfiber A). The lightweight paper is thin, exactly what I wanted for the tiny images; standard-weight paper would have been too thick.

When Richard Bong wrote home to tell his folks about the picture mounted on his plane, he mentioned that he had had it tinted. Color film was still a rarity in the 1940s, so the custom was to have black-and-white portraits "gold-toned" to produce pleasing skin tones and paint the cheeks, lips, and hair with oil colors. The excess paint was wiped off, leaving a tinted image. I was lucky enough to be able to ask FSM staff artist Wells Marshall to color the miniature. Wells used colored pencils and Marshall's Photo-Oils to tint the photo on the presentation model.

I experimented with several glues and decided on a gap-filling super glue to attach the photo to the model. I had to do this carefully; if the photo went on cockeyed it would have to be scraped off, ruining both the photo and the model's finish.

**Mounting the model.** The model was mounted to a  $\frac{3}{16}$ " base of clear acrylic covered with red velvet and placed in a picture frame, Fig. 3. I drilled holes in all three tires and the acrylic and fastened the model by driving small wood screws through the base into the tires. A drop of super glue in each tire reinforced the mount.

I had an engraved plaque made to fit into the corner of the frame and fellow Bong chapter member Dennis Moore built a clear acrylic cover to protect the finished model. Despite borrowing his photos, I managed to keep the presentation at the club banquet a surprise, and Jim Bong now displays the model in his living room.

**FSM**

*I would like to thank Al Jones for donating the kit and assembling the materials for the display base, Dennis Moore for building the acrylic cover, and of course, Jim Bong for the loan of his photos and memories.*

**P. B.**

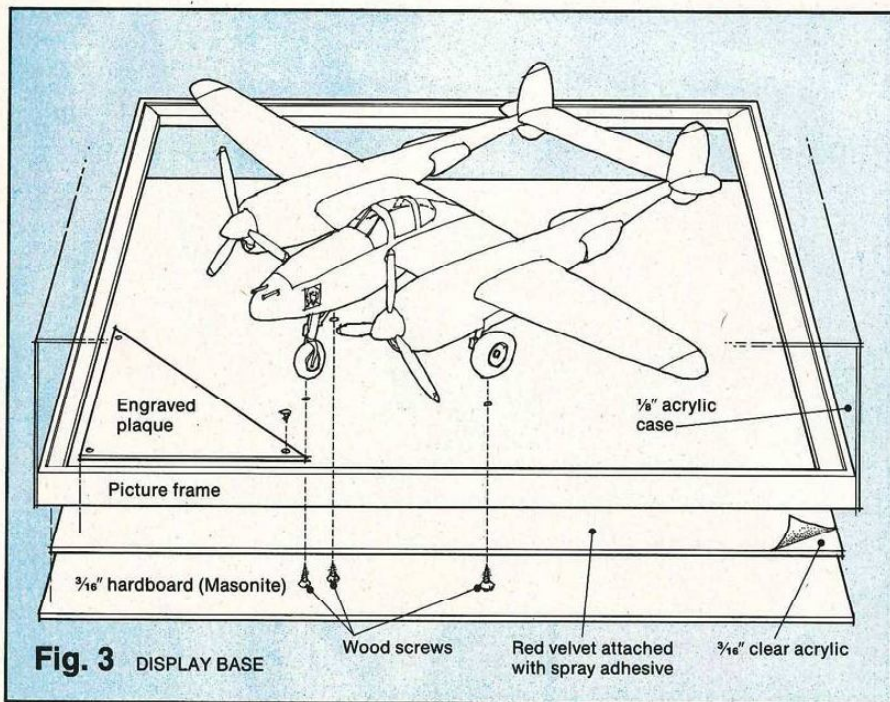


Fig. 3 DISPLAY BASE





Dealer Inquiries Invited  
On Verlinden & Scale Link  
Products.



# WARWINDS HOBBY



Your Complete Model  
Accessory Clearing House.  
Check Our Prices.

## SCALE LINK

A complete line of photoetched & metal casting products to aid in diorama & model building. Hundreds of items in 1/72, 1/48, 1/35 and 1/24 scale. Trees, plants, weeds, leaves, architectural fixtures, dozens of gauges of mesh.

## DETAILING ACCESSORIES

**McKean** Treadplate  
**Parts Depot** Stainless Mesh  
**Milliput** Epoxy Putty  
**Bare Metal** Foil & Polish  
**Waldron** Model Products  
**Model Technologies** Aircraft  
Detailing Products  
**Replimodel** Decals  
**Bare Metal** Décals

## VACUUM FORMED AIRCRAFT

**FRANK-MODELBAU-AIRMODEL**  
**FORMAPLANE**  
**KOSTER AERO ENTERPRISES**  
**FALCON**

## MURPHEY'S RULES

## PUBLICATIONS

**Verlinden** Manuals  
**Lock-On**  
**On Target**  
**Wheels and Tracks**  
**Tanks Illustrated**  
**Warbirds Illustrated**  
And Many Japanese Publications.

## VERLINDEN PRODUCTS

The full line of Verlinden products including the MDA castings.  
**NEW** Three new dry transfer sheets. Four new printed sheets and Lock-on #2 the F16 or target #1 the Tiger Tank. Plus photo etched brass barbed wire and building accessories.

Verlinden Catalogue & Guide (Full Color) \$3.00  
Scale Link Catalogue \$2.00  
Warwinds Catalogue \$1.00  
All Prices Include Postage & Handling



**WARWINDS**

P.O. BOX 686

ST. LOUIS, MO 63188

# ATTENTION RACE FANS:

If you are a collector, a builder, or a driver of model cars, you cannot do without.....

REH's MODEL CAR RACING PARTS LIST & REFERENCE MANUAL "FOR HO 1/32 and 1/24 SCALE SLOT CAR RACING" FOR ONLY \$6.95.

Everything manufactured in the slot racing industry today, and a few of yesterdays items that are still available, is listed in this great catalog. Tools and hobby supplies--it's all here! Over 50 manufacturers' price lists! Pick up a copy at your local hobby shop or raceway. Or send \$6.95 today to REH and we'll include the name of the hobby shop and/or raceway closest to you, where you can purchase model car racing parts and supplies. It's a wonderful hobby sport.



**MAIL THIS COUPON TODAY TO  
REH DISTRIBUTING  
4415 MARBURG AVE.  
CINCINNATI, OH 45209**

Please send me your Model Car Racing Parts List & Reference Manual for \$6.95.

My interest is in: ☐ HO ☐ 1/32 ☐ 1/24

Name

Address

City

State  Zip

## 1930's DIMESTORE Vehicles & Soldiers

MANUFACTURED FROM  
ORIGINAL MOLDS  
HOLLOW CAST IN A SPECIAL  
WHITE METAL LEAD ALLOY



Now, the American Dimestore Figures that were so popular years ago are once again available for your collecting pleasure. A full line of Vintage Autos & Trucks with white rubber tires, 3/4" WWI Doughboys, Santas, Ice Skaters & Skiers, repair & replacement parts. All manufactured & sold direct to Modelers & Collectors.  
Send for your catalog today!



FSM

## VINTAGE CASTINGS, INC.

127 - 74th Street North Bergen, N.J. 07047  
(201) 861-2979

Enclosed is \$1.00, please send me the NEW 10 pg. Vintage Castings' 1983 Dimestore Catalog by First Class Mail.

Name

Address

City, State, Zip



## STYRENE RODDING

USES: PIPING, CONTROL LINES, BRACES, ETC.

DIA	PROTOTYPE SIZES		
	1:72	1:48	1:35
.010"	3/4"	1/2"	3/8"
.020"	1 1/2"	1"	3/4"
.030"	2 1/8"	1 1/2"	1"
.040"	2 7/8"	2"	1 3/8"
.050"	3 5/8"	2 3/8"	1 3/4"

12" pieces, 12/pkg  
available at your dealer or direct  
send 75c and a business size SAE  
for our "Augmentables" flyer

GRANDT LINE PRODUCTS, INC.  
1040B Shary Court, Concord CA 94518



## Dunbar Miniatures

3 Bywood Lane  
Trenton, N.J. 08628

Selection - Quality - Service  
20 YEARS EXPERIENCE

Finest Military Figures  
for the serious hobbyist  
54mm - 154mm

- PERSONALLY SELECTED -
- MAJOR MANUFACTURERS -
- LARGE CURRENT INVENTORY -

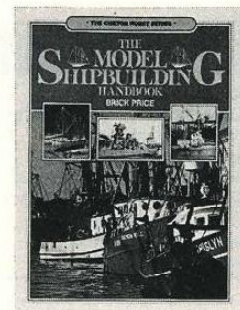
Discount Price List

SEND \$2 FOR DESCRIPTIVE LISTINGS  
REFUNDABLE WITH FIRST ORDER

## FSM BOOK BRIEFS

FINESCALE MODELER invites publishers to submit review copies of books and magazines related to modelbuilding. Send all material to FSM Book Briefs, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

BY BURR ANGLE

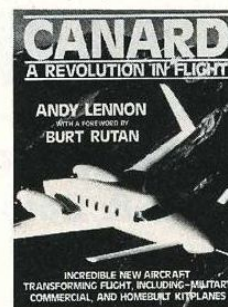


### The Model Shipbuilding Handbook

Brick Price, a professional modeler for more than 20 years, is the author of this 187-page, 7" x 9", soft-cover book that is a beginner's guide to building plastic and wooden ship models from scratch and from kits. There are 77 photos (18 in color) and 160 sketches. The topics covered include choosing tools, assembling and modifying kits, painting, detailing, and displaying completed models.

Throughout, Price advocates using whichever materials and techniques will produce a desired effect most easily at the lowest cost. For example, he reports good results casting figures and small parts with ordinary 60/40 bar solder, which is sold by most hardware and plumbing supply stores.

The book is published by Chilton Book Company, Radnor, PA 19089; the price is \$12.95.



### Canard: A Revolution in Flight

A canard aircraft has lifting surfaces in front of the main wing; these prevent the main wing from stalling. The 1903 Wright Flyer was a canard, as are the new Beech Starship I, the OMAC-1, and many others, including Burt Rutan's series of homebuilts ranging from the Vari-Viggen through the Model 72 Grizzly.

In this 200-page, soft-cover, 7 7/8" x 9 1/4" book with 74 black-and-white photos and 200 drawings (many of which are aircraft three-views), author Andy Lennon provides a history of canard designs of all nations from 1903 to the present and explains why he believes many future aircraft, including

# D & J HOBBY

Revell  
FRODO  
Baron  
TAMIYA  
PROTECTOR

Located in  
**San Francisco-San Jose area**

**D & J Hobby & Crafts**  
96 San Tomas Aquino Road  
Campbell, CA 95008  
Ph. (408) 379-1696

COME IN AND VISIT OUR NEW LARGER STORE

**WE CARRY COMPLETE LINES OF:**

- ★ Imported Aircraft, Ships and Armor Kits
- ★ Fantasy Miniatures & Games
- ★ Minitanks & GHQ Micro Armor
- ★ Humbrol—Polly S—Floquil
- ★ Paasche Airbrushes & Parts
- ★ Scratchbuilding Supplies
- ★ Wargames and Miniatures
- ★ Decals, Magazines and Books

We have no catalog, but we do sell mail order. Send SAE for your specific inquiries.

Open: Mon-Thurs-Fri 10:30-9    Tues-Wed 10:30-6    Sat 10-5:30    Sun 12-5:30

# COMBAT MODELS

NEW KITS !!!!!

### COMBAT MODELS VACUFORM KITS

#### NEW KITS 1/48th SCALE

48-094	XF5U Flapjack	\$15.95
48-062	Hind-D	\$15.95
48-300	Grumman XF10F-1 Jaguar	\$15.95 NEW
48-301	McDonnell XP-67 Moonbat	\$15.95 NEW

#### REISSUED KITS 1/72nd SCALE

72-84	PZL P-24	\$5.95
72-214	North American F-107	\$6.95
72-211	Douglas C-124	\$21.95
72-06	Northrop XB-49 Flying Wing	\$19.95
72-151	XFY "Pogo"	\$6.95
72-163	Dornier Do-28	\$14.95
72-318	Flettner FL	\$5.95
72-4037	IAR-80/Bi-1 (Comb)	\$6.95
32-055	JU-88	\$27.95

#### NEW SUBMARINES

72-105	Mk-1Xc U-505	40"	\$25.95	NEW
72-106	Mk-1Xd & D2	44"	\$27.95	NEW
72-100	USS Ward	52 1/2"	\$28.95	



**XF10F-1 JAGUAR**  
\$15.95

#### SCRATCH & VAC MAGAZINE

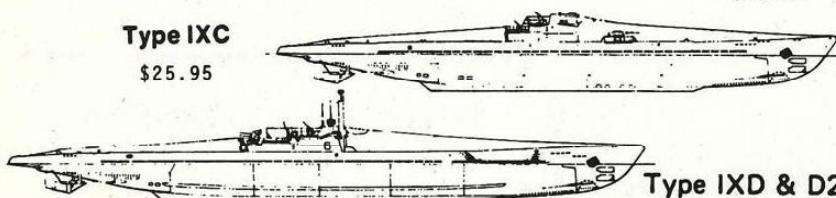
Vol. 5 No. 1 "Sub Special" Part 1  
\$3.50 includes a list of all Combat Models kits. Price list alone 50¢



**McDonnell XP-67 Moonbat**  
\$15.95

### Type IXC

\$25.95



### Type IXD & D2

\$27.95

#### SHIPPING INSTRUCTIONS

U. S. Orders to continental states shipped UPS.

RATES: Orders to \$20.00 add \$2.00, \$20.00 to \$50.00 add \$3.50, \$50.00 up add \$4.00.  
For a complete listing of over 100 vacuform aircraft, ships, softskin, metal accessories, figures, and complete line of our custom decals send 50 cents to:

COMBAT MODELS 400 3rd STREET, WEST EASTON, PA. 18042

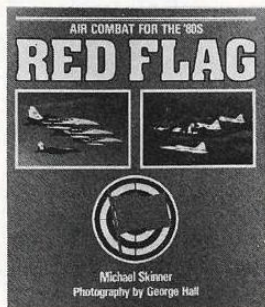
DEALERS INQUIRIES WELCOME



fighters and large airliners, will be canards. The book is published by Aviation Publishers, 1 Ultralight Way, P. O. Box 234, Hummelstown, PA 17036; the price is \$17.95.

#### Red Flag

Journalist Michael Skinner and photographer George Hall teamed up to produce



this study of modern air combat training, primarily the Red Flag exercises conducted by the USAF's Tactical Air Command at Nellis AFB, Nevada. It is an 8" x 8 3/4", 134-page, soft-cover book with 115 photos (20 in color). The breezy text tells why Red Flag was instituted and how it is carried out.

The book is published by Presidio Press, 31 Pamaron Way, Novato, CA 94947; the price is \$10.95.



#### King of the Heavies

#### 380th Bomb Group, 1942-1945

The 380th Bombardment Group was activated in November 1942 and trained at Biggs Field, El Paso, Texas, and Lowry Field, Denver, Colorado, before moving to bases near Darwin, Northern Territory, Australia, in 1943. From June 1943 until January 1945 the 380th was assigned to the Australian Defense Command and worked directly under the RAAF. The group's B-24s flew missions in New Guinea and the East Indies as far distant as Balikpapan, Borneo. In January 1945 the 380th moved to Mindoro in the Philippines and ended the war stationed on Okinawa.

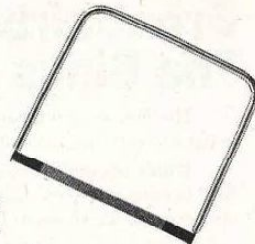
This 184-page, 8 3/4" x 11 1/4", hard-cover book is by Glenn R. Horton, Jr., and Gary L. Horton, whose father served with the 380th. There are 531 photos (21 in color), including many photos of aircraft nose art. The text includes a history of the group's operations as well as a list of aircraft serial numbers and a capsule history of each plane.

The book is available from Glenn R. Horton, Jr., Book Purchase, 5520 West 133rd Street, Savage, MN 55378; the price is \$32.50 which includes postage. **FSM**

# FLEX-I-FILE™

# MAKES MODELLING EASIER

Here's a versatile new hobby tool for clean-up and finish preparation of plastic, wood and metal models. Easy-to-handle frame with tough abrasive tapes allows you to reach into tight corners, erase parting lines, smooth joints and blend contours with precise control.



S-700 STARTER SET: One frame and 6 assorted tapes — \$3.98  
TAPE REFILLS: Pkgs. of 6; Fine, Medium or Coarse — \$1.00 ea.

At your local dealers, or order direct. Postpaid in U.S. and Canada; others add \$1.00.

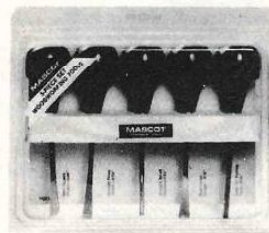
## CREATIONS UNLIMITED

2939 Montreat Dr., N.E. Dept. F  
Grand Rapids, Michigan 49505

## Get a Great Buy and a Bonus With These Mascot™ Tool Sets



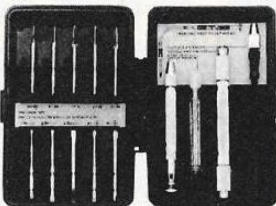
H860 Wood Carving Knives Set



H861 H862 Woodworking Tool Sets



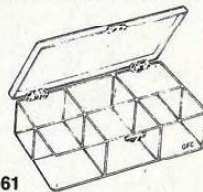
H866 Modeler's Tool Set



H833 Drills/Taps/Screwdrivers Set

We set sales records in 1984 when we introduced these outstanding precision tool sets. It was a banner year for us. So we're making '85 a bonus year for you.

Make this the year you purchase one of these five tool sets, then use the coupon below to receive a handy, six-compartment, small parts box. It's plastic, 4-1/2" x 2-1/2" x 1", and really handy for any modeler working with small parts. Readers of *Fine Scale Modeler* can receive this handy plastic small parts box—**ABSOLUTELY FREE**—with purchase of any of these fine tool sets from your local dealer.



Attach Sales Receipt Here

## YOUR '85 BONUS

A 6-compartment small parts box.

Complete the form below, attach receipt, signed by the retailer from whom the set was purchased, and send to Mascot, Carlstadt, N.J. 07072.

Please indicate which Mascot Tool Set you purchased:

☐ H833 ☐ H860 ☐ H861  
☐ H862 ☐ H866

Your Name \_\_\_\_\_

Name of Store \_\_\_\_\_

Store Address \_\_\_\_\_

Home Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

**MASCOT™**  
PRECISION TOOLS

P.O. Box 243FS • Carlstadt, New Jersey 07072

Offer Expires December 31, 1985.

March/April 1985

65



# Great airbrushing is for the birds. The Binks birds.

The Raven and Wren will do just about anything an artist or craftsman will want to do. And, do it easier.

That's because they're precision engineered for great performance. And because they're made with the finest materials available. (We even made them to be serviced in the field, by you.)

They're strong, versatile, and reliable... the only airbrushes you'll ever need.



The Raven airbrush... for photo retouchers, artists, animators, architects, and fine model builders.

The Wren airbrush... for hobbyists, background work, auto refinishers, and general industry. A great choice for your first airbrush.



Binks offers complete airbrush outfits, air compressors, oil and water traps, air regulators, hose, canned propellant, and more. For more information on our complete line, write for brochure A59-12 FS

Binks Manufacturing Company  
9201 W. Belmont Ave., Franklin Park, IL 60131

**BINKS**

Binks is a registered trademark of Binks Manufacturing Company



## DEALERS: Your Source for Models from Around the World.

ARII—Japan  
BANDHI—Japan  
ERTL-AMT—USA  
GUNZE SANGYO—Japan  
HUMBROL—England  
JOHAN—USA  
KOPRO—Czechoslovakia  
LODELLO—Mexico  
MPC—USA  
NICHIMO—Japan  
PLASTICART—E. Germany  
REVELL—W. Germany  
SUNNY—Japan  
TOMY—Japan  
UNION—Japan

AOSHIMA—Japan  
BURAGO—Italy  
ESCI—Italy  
HASEGAWA—Japan  
IMAI—Japan  
KAWAI—Japan  
LS—Japan  
MATCHBOX—England  
MONOGRAM—USA  
NITTO—Japan  
POL—Poland  
STARFIX—Israel  
TAMIYA—Japan  
TOKYO MAURI—Japan  
WILLIAMS—USA

ARIEL—Japan  
CROWN—Japan  
FUJIMI—Japan  
HELLER—France  
ITALERI—Italy  
KIKOLER—Brazil  
LINDBERG—USA  
MITSUI—Japan  
NAGANO—Japan  
OTAKI—Japan  
REVELL—USA  
SHARP—Japan  
TESTOR—USA  
TSUKUDA—Japan  
YODEL—Japan

Dealers: Send on your letterhead for terms and price list.

### ISLAND MODEL CRAFT SUPPLY, INC.

855'S' South Hoffman Lane  
Central Islip, New York 11722  
516-234-5090



## VIDEOTAPE BRIEFS



### Threshold: The Blue Angels Experience

Produced as a color movie in the early 1970s by Paul Marlow and now available as a videocassette, this is an 89-minute examination of the U. S. Navy's Blue Angels aerobatic team and its F-4J Phantom IIs during the 1970 season. It concentrates on the team's performances that year at Mechanicsburg, Pennsylvania; Honolulu, Hawaii; and Quito, Ecuador. Much of the footage was shot by cameras mounted on the F-4s.

The 1970 team consisted of Harley Hall, Kevin O'Hara, Jim Maslowski, Ernie Christensen, Steve Shoemaker, and Skip Umstead. The men are shown to be superb individual aviators, as when each pilot's Phantom teeters on the brink of a stall during aerial refueling over the Pacific, and as ultra-disciplined formation fliers, as when they hold their planes within inches of each other while performing high-speed maneuvers.

The tape is available in either VHS or

Beta format for \$85.00 from Motorbooks International, P. O. Box 2, Osceola, WI 54020; place phone orders through (800) 826-6600.

### B-58 Video Festival

The General Dynamics B-58 Hustler strategic bomber was the hottest plane ever flown by the Strategic Air Command. This 96-minute cassette is a collection of five color films made in the late 1950s and early 1960s: "B-58 Bendix Trophy Race," "Champion of Champions," "Tall Man 5-5," "B-58 Low Altitude Bombing," and "B-58 Bleriot Trophy."

The Bendix film recounts a B-58 flight from Los Angeles to New York and return in 4 hours, 41 minutes, and 14.9 seconds on March 6, 1962, during which the B-58 won the Bendix Trophy.

In "Champion of Champions" Jimmy Stewart tells how the B-58 set several speed and altitude records — this film also includes shots of the B-58 flying supersonically at 500 feet.

Chet Huntley is the narrator in "Tall Man 5-5," the story of a mock bombing mission.

In "B-58 Low Altitude Bombing" a pre-production B-58 flies from Texas to California at about 200 feet and Mach .92 to demonstrate the plane's capabilities.

Finally, "B-58 Bleriot Trophy" shows how a B-58 won the Bleriot Trophy by flying at 2,000 kilometers per hour (1,240 mph) for 30 minutes.

The cassette is available in VHS or Beta from Historic Aviation, 3850 Coronation Road, Eagan, MN 55122; the price is \$69.95 plus \$3.00 postage. Phone orders may be placed through (800) 225-5575. **FSM**



**COLD!**

### "VALLEY FORGE" 1777

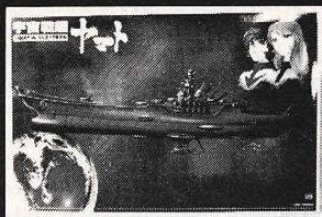
Here's a freezing Continental of Washington's army in the winter of '77. First in a new series of exquisitely expressive 100mm figures by talented sculptor, Jim Wildt. Complete with historical background and detailed color information.

\$24.95 postpaid in U.S. and Canada. (Michigan residents add 4% sales tax.)

Dealer inquiries welcome.



3451 Plainfield N.E. Suite 171  
Grand Rapids, Michigan 49505



# HORIZON

**Hobbies & Toys Distribution**  
**428 BOYD ST. LOS ANGELES, CA 90013**

**We import complete selection of Japanese Science Fiction  
Plastic Models and Diecast Toys.**

**Please call Dealers Information to HORIZON: (213) 687-0853.**



## GREAT PLANES MODELS

### "On the Great Plains of Wyoming"

401 East Boxelder Lane #307  
Gillette, Wyoming 82716

Send a large SSAE for our kit list.  
We buy unbuilt kit collections  
MAIL ORDER ONLY, PLEASE.

# CUSH

FACT, FICTION & FANTASY  
MAIL ORDER — OUR SPECIALTY  
MINIATURE FIGURES



#### NOW IN STOCK

We are pleased to offer the entire Scale Link range of WWI British Soldiers and accessories of that era. Please write for more detailed information.

B7b  
British Officer  
WWI \$5.50

54mm Unpainted Metal Castings  
(+\$1.50 shipping per order)  
Wisconsin Residents Add 5% Tax

Send \$5 For Full Illustrated Catalog  
(\$6 Outside Continental U.S.)

190+ Pages • In-Stock Items Pictured • Periodic Updates

# CUSH

6525 W. Bluemound  
Milwaukee, WI 53213

Hours By Appointment (414) 258-6006

## VACUFORMS



BEECH C-45

WHITE EAGLE	
1/72 BOEING B-50 D	21.95
1/72 BOEING C-97 STRATOFREIGHTER	22.95
1/72 BOEING KC-97 L TANKER	22.95
1/48 BEECH C-45	18.95

#### SHEET STYRENE-WHITE

24 (.020) INDIVIDUAL PRE-SCRIBED PIECES

FOR MATTEL VAC-U-FORM 3.00

#### SHEET STYRENE-WHITE

4 (.020), 2 (.040) - 65/8" x 75/8" SHEETS 3.00

FOR CATALOG SHEETS, SEND SASE.

#### POSTAGE & HANDLING

UP TO \$20.00 \$2.00

\$20.00 & UP \$2.50

MICHIGAN RESIDENTS ADD 4% SALES TAX



WHITE EAGLE VACU-FORM

P.O. BOX 1834

DEARBORN, MICHIGAN 48121

## AMERICAN DRESS AND DETAIL

Number 5 in a series

## 5TH NEW YORK VOLUNTEER INFANTRY REGIMENT (DURYÉE'S ZOUAVES), UNION ARMY, CIVIL WAR, 1861

BY R. J. STAFFORD  
ARTWORK BY THE AUTHOR

ALTHOUGH JOKERS DESCRIBED a Zouave as "an Irishman and six yards of red flannel," the exotic Zouave uniform was greatly admired at the outbreak of the Civil War. Based on Oriental uniforms worn by the French foreign legion, it was popularized largely through the efforts of Elmer E. Ellsworth's U. S. Zouave Cadets, an unbeatable Chicago drill team that toured the eastern U. S. in 1860.

The 5th New York was mustered into service in May 1861 for a two-year enlistment. Assigned to the Fifth Corps under Abram Duryée, the regiment quickly won the admiration of other units when at Gaines' Mill (June 27, 1862) the Zouaves realigned ranks under heavy fire. The unit also saw service at Second Bull Run (August 29 and 30, 1862). In May 1863 most of the regiment's enlistment ran out, but three-year enlistees were transferred to the 146th New York Volunteers. Later, another 5th New York regiment was raised, rejoined the Fifth Corps, and served to the end of the war.

The enlisted uniform is on the right. The fez was maroon felt with a gold tassel; for parades it was wrapped with a white turban and white gloves were worn. The shirt and wool jacket were standard union blue with red lace. All ranks wore black leather belting, and sergeants wore a crimson sash. White spats with leather protectors were worn over the calves. Most Union infantrymen wore a 2"-wide waist belt with an oval buckle, but the 5th New York had a square buckle. A black, heavy leather cartridge box 8½" wide, 7" high, and 2" deep was worn on the waist belt. The box included a brass oval buckle with the letters "U. S." on the outside flap. The 5th New York was armed with the M1862 Remington Zouave musket with the standard 18" bayonet.

Officers (center) wore modified Zouave dress. Instead of the baggy red pants worn by the ranks, the trousers were cut down and cuffless. A short jacket similar to the cavalry type was substituted for the standard frock coat shown here. The dress coat also had Confederate-style braid around the cuffs. The red kepi was trimmed with gold braid. The officer's sword shown here is a presentation model.

The drummer, about 16 years old, wears the enlisted uniform. Normal routine was for children to serve as drummer boys, and it was not unusual for a 14-year-old to be a seasoned veteran. The facing on the drum is a common variety used during the war by federal troops.

As the war continued items were modified for comfort and according to available supplies, but when the regiment was mustered out, all were in the standard Zouave uniform. The 5th New York's honor guard must have been impressive — only the tallest men, all of them over 6 feet, were accepted.

FSM

## REFERENCES

- Blake, Michael, *American Civil War Infantry*.
- Elting, John R. and Michael J. McAfee, *Military Uniforms in America, Vol. III, Long Endure: The Civil War Period*, The Company of Military Historians, Presidio Press, Novato, California, 1982.
- Haythornthwaite, Philip J., *Uniforms of the Civil War, 1861-1865*, Macmillan, New York, 1975.
- Todd, Frederick P., *American Military Equipage, 1851-1872*, Frederick P. Todd Associates, Providence, Rhode Island, 1974-78.







HASEGAWA 1/72 Scale	F-14 Tom Cat \$5.99 YF-16 CCV \$3.95 S-3A Viking \$5.99 Miig-21 \$3.75 IAI Kfir \$4.12 F111-F Tiger \$3.75 F-18 Hornet \$3.75 F-15B Eagle \$3.75 P-40 (Razor) \$3.19 P-47D \$3.19 F5F 3/5 \$2.62 F4U-10 \$3.95 F4U-1 Corsair \$3.95 SR-71 \$7.50 EA-18A \$5.99 Mig-23S \$3.75 EA-6B Prowler \$5.99 F9F-2 Panther \$4.12 F9F-8 Cougar \$3.75 B-17G \$3.19 AD Cityhawk \$3.19 P-40N Warhawk \$2.25 Mig-25 Foxbat \$2.25 Harrier GR.3 \$4.12 F-20 Tiger Shark \$4.12 Ki-48 (Liv) \$5.25 Missubishi T-1 \$5.25 Missubishi T-2 \$5.25 F-8E Crusader \$5.25 Blue Impulse T-2 \$5.25 F-15J Eagle \$5.25 AH-64 Apache \$4.50 Jaguar GR.3 \$5.25 Weapons Set 1 \$3.37 Weapons Set 2 \$3.37 Weapons Set 3 \$3.37 Weapons Set 4 \$3.37 Ground Set \$3.37 Betty Bomber \$8.25 GBN1 (Rita) \$10.89 P2V-7 Neptune \$10.50 A-7A Corsair \$3.75 Me Bf 109E \$5.25 Me Bf 109G \$2.25 Raiden Jack \$3.19 UH-10 Iroquois \$3.19 Jaguar GR 12 \$5.25 F-15C w/Stores \$4.50 A-4EF Skyhawk \$2.62 F-106A \$4.50 P-38 J/L \$3.75 Spitfire Mk1 \$2.25 P-51D Mustang \$2.25 Ki 43 Oscar \$3.19 Ki 64 Forger \$3.19 Ki44 Tony \$2.25 Ki61 Hien Tony \$2.25 Zero Type 21 \$2.25 Zero Type 22 \$2.25 Zero Type 32 \$2.25 Zero Type 33 \$2.25 FW 190 A-5/7 \$2.25 FW 190 D-9 \$2.25 He 51A-1 \$2.25 Mirage F.1C \$4.12 Sea Harrier FRS \$4.12 OV-10 Mohawk \$3.95 OV-1B Mohawk \$3.95 Shidenka! George \$3.19 Raiden Jack \$3.19 Ki 15-1 Babbs \$3.19 B52H Kate \$3.19 Type 99 Sonia \$3.19 Type 97 Nite \$3.19 P-3C Orion \$14.99 F-15E \$6.75 Missubishi T-2 CCV \$6.75	1/48 Scale	OA-4M Skvhawk \$3.95 F-5 Tiger \$3.95 F-100 Sabre \$3.95 Mirage 2000 \$3.95 F-86 Sabrejet \$3.95 F-80 Shooting Star \$3.95 AD-B Skyraider \$3.95 W-Stol Harrier \$3.95 B-24D Liberator \$10.50 B-29 \$11.99 F-4C Phantom 11 \$5.59 F-15 Eagle \$5.59 F-14A Tomcat \$5.59 F-111 Aardvark \$5.59 F-4J Phantom \$5.59 F-105G Wild Weasel \$5.59 A-18 Attack Fighter \$5.59 F-103F \$5.59 F-108 Dart \$5.59 B-25J Mitchell \$5.59 B-17G \$10.50 F-84 Thunderstreak \$3.95 F-104C \$3.95	1/144 Scale Missiles	U.S./U.S.S.R. Missiles \$5.99	OTAKI 1/48 Scale	A6M5C Zero \$3.98 Ki 43 Oscar \$3.98 Ki 61-1 Tony \$3.98 KIKI-J George \$3.98 Willow \$3.98 Mt. JMW3A Jack \$3.98 Ki 94-1 Frank \$3.98 P-51D Mustang \$3.98 Ki 44-1B Tojo \$3.98 Ki 100-1B Goshiki \$3.98 P40E Warhawk \$3.98 Spitfire Mk 8 \$3.98 Mess. BF109G-6 \$3.98 FW 190A-8 \$3.98 F4U-1A Corsair \$3.98 P-47D \$3.98 F6F-3 Hellcat \$3.98	NICHIMO 1/48 Scale	E13A1 Jake \$6.98 B5N2 Kate \$6.98 Spruce \$5.98 Type 99 Sonia \$5.98 Ki 45 Nick \$6.98 Oscar Mk1 \$5.98	TAMIYA 1/48 Scale	Ki-48 Frank \$5.98 Zero Z1 \$5.98 Rufe (Zero/Floats) \$6.75 J2N3 Raiden 'Jack' \$5.98 F-16 \$7.50 A-10 \$15.75 F-15A Eagle \$15.75 A6M3 Zero (Hamp) \$5.98 Sea Harrier FRS Mk1 \$6.75 A6MSC Zero Type 52c \$7.50	1/32 Scale	F-14A Tomcat \$52.50	KOPRO - K.P. 1/72 Scale	MIG-TU (2 Seater) \$4.79 Delphin L29 \$4.79 Avia S199 \$4.79 Lavockin LA 7 \$4.79 MG-15 \$4.79 CS-139 (2 Seater) \$4.79 Aero-139 Albatross \$4.79 MIG 21 MF \$4.79 MIG-17 PF \$4.79 MIG-19 \$4.79	REVELL 1/32 Scale	F-14A Tomcat \$16.50 Hawker Harrier GR Mk1 \$8.50 F-15E Strike Eagle \$16.50	1/48 Scale	CH-53 Sikorsky \$8.99 B1-B Bomber \$24.75 F-16 T-Birds (4) \$18.75	1/144 Scale	KC-135 Stratotanker \$3.75 KC-10 Jet Tanker W/F15 \$6.95 B-52H Stratofortress \$6.95 C-5A Galaxy Transport \$14.25 Boeing E-3A AWACS \$3.75	MATCHBOX 1/48 Scale	Skyraider AD-S/AD-SN \$11.25 N.A. FJ-4B Kingfisher \$11.25 SH-2F Seasprite \$11.25	1/72 Scale	Twin Otter \$4.50 Dauphin SA-30GN Chopper \$2.25 Noorduyn Norseman \$4.50 BAC Lightning TSS \$4.50 Voodoo (2 Seat) \$6.50 Victor K2 \$13.50 Consolidated Privateer \$11.25 Dornier Do18 \$6.75	MPC 1/72 Scale	B-1B Bomber \$9.75 SR-71 \$7.59 OS2U-1/J Kingfisher \$1.79 Kamov Ka-25 Helozone \$2.49 F-84F Thunderstreak \$2.49	Mirage F.1C \$3.59 Lockheed U-2A/B/C/D \$3.49 Tornado GR.1 \$3.59 Mil Mi-24 Hind-A/D \$4.25	1/48 Scale Aircraft	Bae Sea Harrier FRS 1 \$4.25 EA-6B Prowler \$9.75	1/24 Scale	Spitfire MK.1A \$11.25 P-51D Mustang \$11.25 Focke-Wulf FW190A \$11.25 Ju87B Stuka \$17.95 Av-8B Harrier \$17.95 Mess. Bf.109E \$11.25	HELLER 1/72 Scale	M.D. 450 Duragan \$1.99 Vampire FB \$1.99 Heldiver SBC-4 \$1.99 F-86F Sabre \$1.99 N.A. T28 Trojan \$1.99 Constellation L749 \$1.99 Lockheed EC.121 \$1.99 DH89 Dragon Rapide \$5.19 Gloster Javelin T3 \$5.19 Harrier T.2 (2-seat) \$4.39 Super Etendard \$5.19 Mirage 2000 \$5.19 F-94B Starfire \$5.19 DC-6B Securite \$9.97 Etendard IV M \$5.19	1/48 Scale	F84 Thunderstreak \$7.19 RF 84F Thunderflash \$7.19	AIRFIX 1/48 Scale	AH-64 Apache \$12.95 Misoutou FB-IV \$12.95 Spitfire MKVB \$6.95 Ju 87B Stuka \$7.95 Mess. Bf 109F \$6.95 Hawker Hurricane \$6.95	MODEL TECHNOLOGIES (Cockpit Detail Parts)	#1 German WW2 Seatbelt Buckles (with Rudder Pedals) 1/32 2.80 #2 German WW2 Seatbelt Buckles (with Rudder Pedals) 1/48 2.40 #3 German WW2 Seatbelt Buckles (with Rudder Pedals) 1/72 2.00 #4 American WW2 Seatbelt Buckles (with Mounting Hardware) 1/32 2.80 #5 American WW2 Seatbelt Buckles (with Mounting Hardware) 1/48 2.40 #6 American WW2 Seatbelt Buckles (with Mounting Hardware) 1/72 2.00 #7 Jet Aircraft Buckles 1/32 2.80 #8 Jet Aircraft Buckles 1/48 2.40 #9 Jet Aircraft Buckles 1/72 2.00 #10 Jet Aircraft Mirrors 1/32 4.00 #11 Jet Aircraft Mirrors 1/48 3.80 #12 Jet Aircraft Mirrors 1/72 2.20 #13 Ring Sights 1/32 & 1/48 2.80 #14 Martin Baker Ejection Handles (with F-15 HUD) 1/48 2.20 #15 Martin Baker Ejection Handles (with F-15 HUD) 1/72 2.00 #16 F-15, F-16, and Misc. Instrument Bezels 1/32 3.20 #17 F-15, F-16, and Misc. Instrument Bezels 1/48 2.80 #03 F-16A Interior Placard Set 1/72 2.10 #04 F-15A Interior Placard Set 1/72 2.10	1/12 Scale	C-17 Cockpit \$11.25	L.S. 1/144 Scale	F-20 Tiger Shark \$1.59 F-16 XL \$1.59 P-3C Orion \$5.25 A-10A \$2.25 SR71A 'Black Bird' \$3.75	ITALERI 1/35 Scale Armor	US M-109 155mm SP \$7.95 US M-108 105mm SP \$7.95	TESTORS ITALERI 1/35 Scale	Panzer IV \$7.50 Priest \$7.50 Katyusha \$8.25 Elefant \$8.25 Crusader III Tank \$8.25 RSD/1 Tractor \$7.19 Willy's Jeep Commando-Car \$4.87 Water Tank Truck \$6.75 Dodge Truck Ambulance \$6.75 Panzer \$8.25 Willy's Jeep w/3 figs \$4.87 155mm Gun w/Figs \$6.75 Patton M47 \$8.25 Sherman M4 A1 \$6.75 Water Tank and Cargo-Trailers \$4.87 White Scout Car \$6.75 Dodge T-2 Ton Truck \$7.19	CROWN 1/144 Scale	Mirage F. IC \$1.49 SAAB JA-37 Viggen \$1.49 Sea Harrier \$1.49 AV-8A Harrier \$1.49	1/48 Scale	Piper 140 'Cherokee' \$5.95 Pescina 150L 'Commuter' \$5.95 Piper PA-18-1
------------------------	--	------------	---	----------------------	-------------------------------	---------------------	---	-----------------------	---	----------------------	---	------------	----------------------	----------------------------	--	----------------------	--	------------	--	-------------	---	------------------------	--	------------	---	-------------------	---	--	---------------------	--	------------	---	----------------------	--	------------	--	----------------------	--	--	---	------------	----------------------	---------------------	---	-----------------------------	--	-------------------------------	--	----------------------	---	------------	--



## MILITARY HISTORY



**ON VIDEOCASSETTES**  
See military history as it happened! World War I through the Falklands campaign. The other side of World War II: original German combat newsreels and features of the great battles. Rare Allied Army and Air Force documentaries. Also Korea, Vietnam, and contemporary Soviet Army. Over 300 titles reproduced from original source materials. Beta/VHS, also PAL Standard. Reasonable prices, fast service. Write or phone for free illustrated catalog. **INTERNATIONAL HISTORIC FILMS, Box 29035, Chicago, Illinois 60629, Phone 312-436-8051.**

## SUBSCRIBER NOTICE

From time to time, FINESCALE MODELER Magazine makes its subscriber list available to reputable companies and organizations that wish to provide our readers with flyers, catalogs, or other material of interest. All mailings are evaluated by FINESCALE MODELER to ensure the integrity and suitability of the material. Our policy forbids telephone or other direct solicitation by these firms, but does release your FINESCALE MODELER mailing label to them for their one-time use.

If you would prefer not to receive these mailings, please send us a recent mailing label from the envelope your magazine arrives in, or copy the label exactly as it appears. Please send the label with a brief note directing us not to make your name available, and we will exclude your name from these mailing lists.

**FineScale  
MODELER**

## FSM TIPS AND TECHNIQUES

Would you like to share information on a useful tool or technique with other FSM readers? Send a brief description of the tool or technique and a black-and-white photo or a pencil sketch to FSM Tips, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233. Please enclose a stamped, self-addressed envelope for return of photos. Tips are paid for upon publication.



**Removable tape.** I use Scotch Magic Plus Removable Transparent Tape when masking my models. Its low-tack adhesive won't pull up fragile finishes like Metalizer and Lique-a-plate. It's not the best on compound curves and heavy surface detail but it's excellent on straight lines. Look for it in office and art supply stores.  
*D. H. Minton*

## SCRATCH MODELERS NOW HEAR THIS!!!!

I am an agent for DYNAMIC MODELS selling their complete line of fiberglass hulls, electric motors, sound systems and R/C accessories... Catalog #5 is priced at \$4.00 postpaid (refunded with first order.)

**RATHER** build from scratch using plans? Then, I offer you the TAUBMAN catalog plus the MAP Plans Handbook #2 of 1,000's of illustrated plans for Warships, Submarines; Sail, Sailing, Yachts, Liners, Tugs, Working Boats, Speed Boats, L.C.'s and more. Cable laid linen rigging, books and accessories. All this for \$3.50 plus \$1.50 domestic 3rd class mail. (Can., Mex. and overseas surface mail \$2.50. Air mail to So. Amer. \$7.00; Pac. area \$9.00).

Those interested in warships, liners and merchant marine add an additional \$1.00 for the Wiswesser catalog.

The MAP #3 catalog for ENGINES - marine, steam, loco., planes, misc. \$2.00 plus \$1.00 shipping.

### TAUBMAN PLANS SERVICE

11 College Drive  
Box 4G - Dept. FSM  
Jersey City, N.J. 07305

(When sending inquiries, please include a S.A.S.E.)

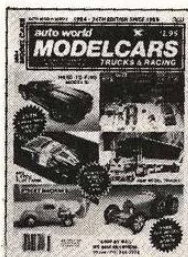
## AMAZING TOOL!

SLICES PLASTIC LIKE BUTTER



**INFLECTS BATTLE  
DAMAGE ON  
PLASTIC WAR  
MODELS**

"Of all the more advanced tools you could get, none is better for making customizing easier"... Dennis Doty, master modeler/author of "The Complete Book of MODEL CAR BUILDING".  
**No. 28-225 AUTOCUTTER Hot Knife with Battle Damage Tips, \$14.95 plus \$2.00 handling.**



**NEW MODEL CARS, TRUCKS, SLOT RACING CATALOG**  
The "A to Z" catalog of AMT, MPC, Monogram, Tamiya, Pocho & more. Scratch supplies and decals.  
**130 pages, 35th Edition, \$3.00 pp.**

**auto world**

701 N. Keyser Ave. / Dept. 46  
Scranton, PA 18508

## CLIMB ABOARD THE GREAT NEW SHIP MODELING MAGAZINE...

# Ships in Scale

If you've ever built a model ship before—or even thought about building one—this magazine is for you! *Ships in Scale* is the magazine for hobbyists, would-be hobbyists, or just those who love to putter about, dream about, or read about ships. *Ships in Scale* covers every aspect of ship modeling—power and sail, plastic and wood, scratch building and kit, even radio control. You'll find detailed articles, pages of plans, fantastic photographs, historic—and nostalgic—journeys into the past, plus news and notes of nautical events.

**Subscribe now and save \$3 off the newsstand price.  
Enjoy one full year (6 issues) for just \$18.**

### MAIL THIS COUPON TODAY!

**YES!** Please enter my subscription to SHIPS IN SCALE for the period checked.

- ☐ 1 YEAR (6 issues) \$18 (Regular newsstand price is \$21/year!)
- ☐ 2 YEARS (12 issues) \$34. (Lock in bigger savings for 2 full years!)
- Subscriptions for Canada:  
1 year \$22; 2 years \$41.
- Subscription for other foreign countries:  
1 year \$26; 2 years \$46.
- ☐ My check or money order is enclosed.

☐ Charge my credit card. FSM 45  
☐ Visa ☐ MasterCard ☐ American Express

Card No. \_\_\_\_\_

Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Please allow up to 8 weeks for delivery of your first issue.





## SCRATCH BUILDING SUPPLIES

Barrels Straight Wire Screen  
Glass Chain Sheet Plastic  
Sheet Metal Tools Dowels  
Dry Transfer Alphabets & Stripes

Catalog #5 - \$2.00



**Clover House**

Post Office Box 62D  
Sebastopol, California 95472

**NEW**

## From UNIQUE MODELS

*Always the unusual...*

From Poland 1:72 RWD 5 \$5.00, Bocian & Gil Gliders \$4.50 ea. KP Spitfire XILFE \$5.00. Supermodel Cant Z-506 \$13.00. Aeroclub parts. Specially made 24" W/S Beaver w/floats \$22.00. Back issue mags, books, decals, kit BIDS and CLOSEOUTS in our Newsletters, \$3.00 a yr. AFV lists 50¢. Airmodel TA-183 \$6.00, XF-91 & more this year. Execuform B-18 \$8.95, BT-13 \$5.75. Andersson Berg-Falke glider \$5.00 & new 1:48 kits. Epoxies from France & Japan in 1:72 & 1:48. Vacu's & resins catalog \$1.50 & update. 1:1200/1250 aircraft & ships lists \$1.00. 1:700, books, lists 75¢.

## UNIQUE MODELS

22 Brandies Rd., South Toms River, NJ 08757

**Masking small areas.** I've been working on the new MRC-Tamiya 1/350 scale U.S.S. *New Jersey* and came up with a method to mask around the tiny rectangular areas on the decks. Rather than precisely measure and cut each piece of tape, I place a large piece of masking tape on a sheet of glass and randomly cut small rectangular pieces with a straightedge and knife. Then I select a piece the approximate size needed and stick it in place. Another overlapping piece can cover any remaining unmasked area.

To mask round items such as vents, I use various sizes of brass tubing as templates to cut the tape. Plastic circle templates won't do since they are easily damaged by the blade.

*Alan Ernat*

**Staples.** Common staples can be used to produce uniform grab handles or steps on ship, truck, armor, or industrial models. A wide variety of sizes is available at office supply stores. They can be attached with super glue.

*Mark Savage*

**Makeup.** I've tried just about everything for fine paint detailing on ships, planes, armor, and figures, and with the help of my three teenage daughters, I've found something that works well for me — makeup! It's inexpensive and available at any cosmetic counter. Eye shadow and face makeup come in many shades that work well as brushed-on highlights. I seal them with a spray of clear flat. You might want to get your own supply — borrowing your wife's or daughter's may get you in hot water.

*Larry Dever*

**FSM**

# 1001 UNIQUE WOOD SHAPES

## IN PRECISION SCALE BASSWOODS

Today, basswoods are preferred over balsa more and more by the serious hobbyist, prototype model maker, dioramist, architect, etc., because of structural strength, ability to hold detail, ease of working and longevity. From structural shapes, doll house mouldings, carving blocks, decking, strips and sheets to hardware and complete model railroad kits, Northeastern offers a complete line of quality, precision scale products. Satisfaction guaranteed or your money back.

For fastest action—mail this coupon today!  
OK Northeastern—rush me your catalog and prices today.

Name

Firm

Field of interest

Street  City

State  Zip

SEE YOUR  
LOCAL DEALER  
OR WRITE  
FOR OUR  
CATALOG  
AND  
PRICES  
TODAY!



**NORTHEASTERN  
SCALE MODELS INC.**

P.O. Box 425FSM  
Methuen, MA 01844  
(617) 688-6019

W·W·1

**Aero**  
THE JOURNAL OF  
THE EARLY AEROPLANE

SAMPLE ISSUE \$4

15 CRESCENT RD. POUGHKEEPSIE, N.Y. 12601



## DETAIL & SCALE DECALS

Compare Detail & Scale decals to other decals. You will see a big difference in accuracy, detail and instruction sheet info.

## FORMATION LIGHT PANELS FOR F-4, F-14, F-15, & F-18 AIRCRAFT

Sheet 0372=1/72 & 1/144, Sheet 0848=1/48th, Sheet 0332=1/32nd

## DID YOU KNOW...

That the three segment light panel on the nose of the F-4 is a different size than the three segment panel on the fuselage?

That the color of these panels is a very pale yellow, not the dark yellow or yellow-green seen on most decal sheets?

That Detail & Scale has released decal sheets that have been color matched and sized exactly from the real thing?

Each sheet has a solid color block for making wing tip lights.

**Detail & Scale helps you make your models more accurate!!!**

DISTRIBUTED EXCLUSIVELY BY AEOLUS/DEALER INQUIRIES INVITED

See Detail & Scale decals at your local hobby shop. If your local hobby shop does not have Detail & Scale decals, order direct from Aeolus Publishing. Decals are \$3.50 each, plus 25¢ each for postage and handling. Mail your order to:

**AEOLUS PUBLISHING  
P.O. BOX 2643  
VISTA, CALIFORNIA 92083**

NAME (Please print clearly!!)

ADDRESS

CITY

STATE

ZIP

Please send me the following

\_\_\_ 1/72 & 1/144th Sheets

\_\_\_ 1/48th Sheets

\_\_\_ 1/32nd Sheets



## NEWS • WALTHERS • NEWS

- 12 months, 12 issues subscription to Walther's *Craft Train News*.
- Each monthly issue describes, shows, and reviews all new products, gives prices, tells about future releases and delivery dates, and reports on manufacturers. Also plenty of pictures and feature articles.
- \$6.00 USA/CANADA, \$15.00 FOREIGN, FOR A 12 MONTH SUBSCRIPTION.

Auf der Fricko Eisenbahn

18 E. Fourth St., Rm. 1009, Cincinnati, OH 45202

## PLASTIC MILITARY MODELS



San Diego's only hobby store devoted **exclusively** to the plastic modeler.

We carry a full range of domestic and foreign made kits, including vacuforms.

We also have decals, paints, books and airbrushes. In addition to military models, we carry an extensive line of plastic car kits.

**16769 Bernardo Center Dr.  
San Diego, CA 92128  
451-3591**

## AERO BOOKS

since 1939

BRAND NEW FOR JANUARY '85

**A Scratch Modelers Log** by Henry Bridenbecker. Documents 17 unusual ship models built by the author. Contains a collection of ingenious "How To's" for modelers. Nautical history buffs as well as modelers will be inspired by this lavishly illustrated book. 112 pgs. 80 full color pages.

ISBN 0-8168-0014-6 Deluxe Softbound \$17.95

### Colors & Markings Series

Vol. 1, **F-106 Delta Dart**  
by Bert Kinzey

ISBN 0-8168-4525-5  
64 pgs. 16 pgs. color,  
Softbound \$9.95

Available Soon:  
**Colors & Markings  
of the F-14 Tomcat**



### Detail & Scale Series

Vol. 17, **F11F Tiger**  
by Bert Kinzey

ISBN 0-8168-5026-7  
72 pgs. 8 pgs. color,  
Softbound \$7.95

Next in Detail & Scale,  
Vol. 18, **B-47 Stratojet**

FULL AERO CATALOG AVAILABLE!

**AERO PUBLISHERS, INC.**

329-F West Aviation Rd., Fallbrook, CA 92028

## CARD MODELS

FASCINATING!

REALISTIC!



1985  
CATALOG 75¢

★ 48500 MC KENZIE HWY.  
VIDA, OREGON 97488

## TIRED OF WAITING? AIRCRAFT & ARMOR

**THE PLASTIC PLACE** features fully personalized service - second to none! We carry the newest kits via air from Europe. AND we also carry the old "stand-bys" that the discounters don't bother with. We stock the FULL line of Micro-Scale decals as well as 3 lines of paint, lots of diorama accessories too.

NEW: Heller F-94B & T-33A with full cockpit detail. Each \$6.50. DC-4 by Heller, \$12.95! Matchbox 1/2 Twin Otter, \$6.00. Dauphin copter \$3.25.

Hasagawa decals after the New Year!!!!



Our 60 page catalog is yours for \$2.00

## THE PLASTIC PLACE

6321 S. Salina St. Nedrow, N.Y. 13120

Visa & MasterCard Welcome!

## CLASSIFIED ADVERTISEMENTS

### PLEASE FURNISH STREET ADDRESS FOR FSM'S PRIVATE RECORDS WHEN USING A P.O. BOX NUMBER IN YOUR AD

This section is open to anyone who wants to sell or buy scale modeling merchandise. FINESCALE MODELER reserves the right to edit undesirable copy or to refuse listing.

**RATE:** 22¢ per word. MINIMUM charge is \$2.64. Count ALL initials, single numbers, groups of numbers (i.e., AFV or B-24), name, address number, street number, city, state, phone numbers each as one word. Zip code is free. Payment should be made in advance.

**CLOSING DATE:** Jan/Feb issue closes October 15, Mar/Apr issue closes December 15, May/June issue closes February 15, Jul/Aug

### FOR SALE

**Brookhurst Hobbies**, 12741 Brookhurst Way, Garden Grove, CA 92641 has military kits from around the world! Plastic armor, aircraft, wargames, books, paints, tools. Mail orders sent anywhere. Catalog, \$3.

**Recon Hobbies:** Big discounts on armor, aircraft, ships, cars, games, hobby supplies, plus collectors' corner. Send \$1 for catalog to P.O. Box 123, Manhasset, NY 11030-0123.

**We have the latest plastic, military, and automobile kit releases in stock.** Mail order is a specialty with us. Also books, decals, paint, magazines, and more. Write or call. Ted's Engine House, 6307 Westfield, Pennsauken, NJ 08110. (609) 662-0222.

**Lead soldier molds**, scarce Civil War, WWI, WWII cannons, Napoleonic, fantasy. An easy and fun hobby. Illustrated brochure \$1 (refundable). Dunkin, Box 717FS, Calvert, TX 77837.

**Lead soldier molds**, castings, military, civilian, 25 mm-54 mm. Catalog, \$1. Toy maker of Charleston, P.O. Box 1406, Charleston, SC 29402.

**Big 37-page catalog.** Lists hundreds of 1:64 scale items including styrene, wood, vehicles, figures, trains, decals, backdrops, structures, and more. \$2.75 in U.S., \$4.25 elsewhere. Ask for our 1:48 list. Scenery Unlimited, 310 Lathrop, River Forest, IL 60305.

**Airliners of the world.** Top quality 35 mm full color collectible slides of aircraft from over 100 countries. For 32-page illustrated catalog, supplement list, and two sample slides, send \$2 to Airline Photos, Box 650034, Miami, FL 33165.

**Scale documentation:** One of the world's

issue closes April 15, Sep/Oct issue closes June 15, and Nov/Dec issue closes August 15. We do not furnish box numbers.

**ALL COPY:** is set in standard 6-point type. First several words only set in bold face. If possible ads should be sent typewritten to insure accuracy.

**READERS' NOTE:** When advertiser says SSAFE or SASE he requires stamped, self-addressed envelope with your inquiry. LSSAE is large envelope.

Send your ads to FineScale Modeler, 1027 N. 7th St., Milwaukee, WI 53233.

largest full-color collections of aircraft Foto-Paaks and Koku-Fan 3-views, Catalog \$2 and SSAFE to Scale Model Research, 418 E. Oceanfront, Newport Beach, CA 92661. Satisfaction guaranteed.

**Military miniatures.** Painted 30 mm boxed sets, U.S. Civil War infantry, cavalry, artillery, WWII U.S. and German. SSAFE for list. Modeltoys, Box 3032, Warrenton, VA 22166.

**Japanese science fiction kits** at low, affordable prices. Latest popular robot, monster, spaceship kits, all in our catalog. \$2 for latest issue, refunded with first order. Compare and save money at Starline, Box 322-SF, Stanton, CA 90680. Visa/MasterCard.

**Kit Collectors International** is the club for model kit collectors, with our bimonthly photo-illustrated journal "Vintage Plastic" featuring articles and news for kit collectors and loads of reader ads. Over 600 members worldwide. Many benefits for members. SSAFE gets full information. \$1.75 for sample "VP" issue. Membership \$12 per year U.S. and Canada; \$18 per year worldwide. Kit Collectors International, Box 38, Stanton, CA 90680.

**Airliner model kits**, decals, related items. Large selection from all over the world. Low prices, compare and see! Mail order worldwide. \$1 for latest catalog. Visa/MasterCard. Starline Hobbies, Box 38, Stanton, CA 90680.

**Gate 66**, the airline modeler's newsletter, published bimonthly since 1974, covers all aspects of airliner modeling. Well-illustrated photos and ads. Subscribe to the original Gate 66, \$9.50 per year in North America, \$18 per year worldwide. Checks payable to Starline. Mail to: Gate 66, Box 660, Stanton, CA 90680. Sample copy, \$1.75.

**Armor and military vehicle book specialist.** Hundreds of new titles available from our extensive stock. Tanks, SPGs, jeeps, trucks, etc. WWII, modern, etc. Many hard-to-get books from overseas, some exclusive with us. Also military insignia and uniform books and references. Member American Booksellers Association. Send three stamps or \$1 for latest 24-page illustrated catalog. Portrayal Press, P.O. Box 1913-W, Bloomfield, NJ 07003. (201) 743-1861.

**Dismounted generals:** Duplicate scarce lead soldiers from your own collection. Will make inexpensive molds for casting lead from figures you provide. You cast or I cast for you. Information, prices, \$1 refundable. Write E. H. Burley, 5620 Bayshore Rd., Palmetto, FL 33661.

**Soldier molds**, fox hunt, cannons, fantasy chess, Civil War, Napoleonic, and more. 15 mm to 80 mm castings. Painted soldier sets. Free brochures. Catalog \$1, soldier and catalog \$2. Coastal, Box 44-FS, Cedar Grove, NJ 07009.

**Attention:** Gamers and collectors, over 100 superbly detailed 15 mm scale WWII AFV's, U.S., German, Russian, British, and Japanese, plus infantry figures. These are precision metal castings. Must be seen to be appreciated. Write for price list. Quality Castings, Dept. F, P.O. Box 11714, Alexandria, VA 22312.

**Oil field and construction diorama tools and accessories.** 1/24 scale resin castings. Traveling block, tongs, pulleys, cat head, more. Send SSAFE and \$2 money order for illustrated price list. O. T. Laughlin, Jr., 4931 Old Boonville Highway, Evansville, IN 47715.

**T34/85 turrets** model 1944, 1/35 scale, cast resin. Fits your T34/43 hull. \$9.75 each, postage included. John Morgan, 25418 Charles Ave., Hayward, CA 94544. (415) 886-1624.

**Detailers and scratchbuilders.** Let us help you with that special model. We have the supplies that you need. SSAFE to Model Storehouse, 8580 Gaines Ave., Orangevale, CA 95662.

**Model kits below retail.** Imported and domestic. Send SSAFE for information. Pentagon Models, P.O. Box 564, Placentia, CA 92670.

**Aircraft enthusiasts!** The famous Mini Autogyro Wallis 116, static display, super-scale model in case. Scale 1:9.5 all metal. Gold medal winner at Model Engineering Exhibition Wembley, Great Britain, 1982. Price: \$1000 U.S. Write to G. J. Izera, 12 Kyle Close, Wildridings, Bracknell, Berks, England. Phone 0344 421432.

**Free catalog:** All new for winter 1984-1985. Historical miniatures and models. GHQ, Tradition, Stone Mountain, Ral Partha, much

more. All scales. New catalog includes large selection of plastic model kits and accessories. Books, games, much more. Plus free monthly newsletter. Credit cards okay. The Model Shoppe, 323 1/2 Richmond St., El Segundo, CA 90245.

**Flying model kits**, 1950's vintage. Army 'Super Sabre' or Navy 'Demon' mint. \$4.50, two for \$8 postpaid. Ronald Ginkowski, 5106 25th Ave., Kenosha, WI 53140.

**Tradition-Scandinavia 30mm figures** from Sweden. Sculpted by Charles Stadden and Clive Knight. Over 700 figures available. Some of the finest figures available in any scale. For the serious collector and artist. Also Willie 30mm figures sculpted by Edward Suren. Some of the highest quality pewter 30mm figures available anywhere. Catalog \$1, refundable with first order. The Model Shoppe, 323 1/2 Richmond St., El Segundo, CA 90245.

**Models!** Buy direct from importers. Savings: Heller, Schabak, Eko, CEF, Eligor, Brumm, Starline, Atlantics, Imai, KJD, more! Catalog \$1. D.A.L. Associates, Inc. FSM, P.O. Box 1237, Mountainside, NJ 07092.

**Plastic Kit Constructor** quarterly magazine. Mainly aircraft modeling. First five issues available, \$2 each. Annual subscription \$8. Send to Wise Owl Worldwide Publications, 4314 W. 238th St., Torrance, CA 90505.

**For sale:** Kits and decals, discounted. Send LSSAE to Yoav Efrati, 1454 First Ave., Apt. 2R, New York, NY 10021.

**Finish your model** with an engraved brass nameplate. Send SSAFE for information and sample to Volant Plastics, P.O. Box 443, New Cumberland, PA 17070.

**For sale:** Czech 1/48 model A Let 43 (J) glider \$20. Repro black Gestapo officers peat cap and generals peaked cap each \$44. P.J.R., P.O. Box 122, Martinsville, IN. 08836.

**Discounted books** on planes, helicopters, tanks, ships, weapons, cars, trucks, trains, war, sports, self-help, etc. For free catalog call (415) 782-2064 or write to TeleShop, FSM, Box 56873, Hayward, CA 94545.

**Aircraft Profile volumes 1 through 14:** Cross and Cockade Journals 1 through 20, first six bound; Air Enthusiast volumes 1 through 6 and Air International volumes 1 through 9, all bound. Doubleday volume 1 RAF Fighters and volume 2 German bombers WWII. Make offer. Paul Rehnitz, 3175 Duford Rd., Sagle, ID 83860.

**Solar Sales**, P.O. Box 1164, Salem, NH 03079. I recently purchased rare original Pittman motors. Styles G84-6 for model ships up to 48" long and G65A-6 for smaller ships up to 36" long. Both are six volt battery powered. They come to you in their original



boxes. Because of the price the price must be before being shipped. Each motor is tested before being shipped. Either motor is \$10 each, plus \$1.50 per motor for postage and handling. These will be sent to you 1st class mail. Money orders or cashiers checks will get immediate shipping. Personal check will take two to three weeks for delivery. With all orders we will send a complete listing of our model ships - wood, decking, fittings, paints, cements, and tools. We believe our listing contains the finest quality items at very reasonable prices, so will you. If you just want our list, send a LSSAE to the above address.

**Where are all the old plastic model kits?** Bean's Models and Hobby Shop, 624 Main, Longmont, CO 80501. (303) 772-3169.

**New items for sale:** Italeri 1/72 B58 \$9, 1/35 Mid8 SPG \$8.25, 1/35 Mid9A2 \$10.50, 1/35 Mutt with trailer \$7.15, Nubus 1/48 VAC Scimitar \$14, Airfix 1/48 AH64 \$13.90, Aero Club VAC 1/48 Gnat \$14, Matchbox 1/72 twin otter \$4.90, 1/72 Daphnia SA 365 \$2.50, 1/72 Nato Para \$2.50, Pegasus 1/72 F3F \$9, Bristol MIC \$9, 7F1 snipe \$9, FW44 \$9, Cramer 1/48 VAC Roland D2 \$6.40, Halberstadt DI \$6.40, Bristol MIC \$6.40, MasterCard and Visa Call (804) 973-2705. APC Hobbies, Box 122, Earlysville, VA 22936. Postage per order \$1.50

**Subscribe to the APC old and used kit list for 1985.** Five lists due out, \$5. APC, Box 122, Earlysville, VA 22936.

**Science fiction imports:** We have direct access to foreign suppliers and offer a wide range of rare and unique kits. Thunderbird Secret Base diorama set, including T-Birds 1-5, is now in stock; Giant T-Bird two with vehicles; Bandai Thunderbirds 1-4, Jet Mole; Captain Scarlet Angel Interceptor;

Batmobile, UFO SHADO Interceptor; Eagle Transporter; King Ghidrah, Godzilla, Mecha-Godzilla, Gamera; Starblazers series, including 1/500 Space Cruiser Yamato, plus many, many more. Send \$1 for our latest catalog to WesPac Enterprises, Box 596, Marina, CA 93933.

**Namophiles, cast resin 1/72 SUU-11 mini gun pods (six) in a set, (four) \$2.75 'Spad' rocket tubes set, (four) 1/48 SUU-11 pods in a set, (four) set of 1/48 \$2.75 tubes, 1/35 (three) set of NVA/SF rucksacks, (three) set of AN/PVS-2 Starlight scopes, (10) set of M-26 frags, (four) set of helmets with covers, straps, bug juice, magazines, and cigarettes, (six) set M-56 M-14 ammo pouches with frags, (six) Marine single M-14 ammo pouches, (three) M17A1 gas mask bags, (five) individual first aid kits and (six) battle dressing/compass pouches to a set. Each set \$1.50 plus 75¢ per order. Complete listing available for SSAFE. Send to Keith Pieper, In-Country Hobbies, 1467 W. 2nd St., Mesa, AZ 85204.**

**Clear plastic for Mattel Vac-U-Form:** .020 clear vinyl is cut to size and ready to use; makes superior moldings for canopies, etc. New low prices: 20 sheets for \$4, plus \$1 postage; 50 sheets for \$8, plus \$1.50 postage. New value-pak: 100 sheets for \$15, plus \$2 postage. Free State Scale, Route 5, Box 118, Hagerstown, Md. 21740.

**Technical Books:** Metalworking, woodworking, electronics, automotive, plans, science. Large catalog, \$1. Eric Keats & Co., P.O. Box 796, Station A, Scarborough, Ontario, Canada. M1K 5C8

**Sherman 'Jumbo' model for sale.** See article in this issue. \$500. Serious inquiries only, please! Musikoff, 1052 Seco St. No. 204, Pasadena, CA. 91103

## WANTED

**Wanted:** 1/8 model automobiles (kit or built-up). Monogram, ITC, Bandai, Lindberg, Heller, 1/48 Monogram Rag Boats, chassis for Revell V-8, clear plastic (B-17, P-51) kits. Bennett Alban, 1st National Plaza, No. 3040, Chicago, IL 60603.

**Wanted:** Clear parts to Aurora C-119 kit, will pay reasonable price. Also wanted Testors Zeppelin, Monogram 335 arrow, Scale Aircraft Modeler, and all free lists of space and science fiction kits. Larry Deavers, 942 Arundel Rd., Baltimore, MD 21221.

**Wanted:** Any kits you no longer intend to build. Send list or call Charlie Face, APC Hobbies, Box 122, Earlysville, VA 22936. Phone (804) 973-2705.

**Wanted:** Revell Yorktown class carrier (1/450?) CV-5, 6, 7, or 8. Serious offers, call collect (405) 482-3635.

**Wanted to buy:** I need one set of Tidewater Trucker's Holmes Wrecker Gears, that were available from Auto World. Will pay top price. Please write to Jim Coppinger, 456 West Side Ave., Jersey City, NJ 07304.

**Wanted:** Scale drawings or plans for these 1963-1965 racing cars: Ferrari GTQ I, GTQ II, 275 Lb, 275 GTB, Cobra 289 and 427 roadsters, Cobra 289 and 427 coupes, Corvette Grand Sport, Jaguar Lightweight E-type, Abarth Simca 2000 GT, Porsche 904, Aston Martin DB4GT, Alfa TZ1 and TZ2, photocopies okay. Mike, 6719 E. Malcomb, Paradise Valley, AZ 85253. (602) 998-9192

**Wanted:** Fowler decals FD-4812 for Corsairs of NAS Olathe, Kansas, and information on above NAS. Roger Ziegenhorn, 14722 Murray Lane, Olathe, KS 66062.

**Any Bandai,** Tamiya, Aurora, Otaki, or 1/48 scale armor kits. Also Bandai 1/48 accessory kits. Also wanted 1/72 Hasegawa Thunderbird kits. All kits must be in original box, and contain original artwork and decals. Also have over \$200 worth of GHQ Micro-armor in original packaging for sale or trade. Write to Tom Hastings, P.O. Box 1706, New Rochelle, NY 10802.

**Wanted:** Two Jima flag raising, green beret, U.S. infantryman, Guillotine, and figure. Aurora kits approximately 1/9 scale (complete). Also complete set of Marshall Cavendish illustrated encyclopedia of WWII (24 volumes), and Marshall Cavendish History of the Second World War (96 weekly issues). Stuart Yanoff, 123 Lafayette, St., Marblehead, MA 01945.

**Wanted:** Microscale CV-880, Sebel Viscount, Britannia, TWR IL-18, Unique Scale IL-38, Britannia, Allyn, DC-7C, Coma/Aermec no. 4012 Viscount, scratchbuilt conversion kits no. 6 Comet 4B, no. 7 Boeing 307, Bob Linden, 3139 Greenbrier Dr., Bettendorf, IA 52722. (319) 355-4939.

**Wanted:** 1/144 Entex Spruce Goose. Believe this kit went out of production in the early 1970's. Will pay top price for complete unbuild kit. May accept partially built or parts missing. Please state condition and price wanted. Pat Davis, 19720 Hildebrand Rd., Acampo, CA 95220.

**Wanted:** Czechoslovakian resin kits, Japanese science fiction kits, all metal 1/12 scale radio controlled Tiger I tank by Toshiba, Andrew Mallow's Waffen SS series book, Volume II. German, Russian, European kits not sold in U.S. Also want German and Japanese pen pals. P.J.R., P.O. Box 122, Martinsville, NJ 08836.

## LOCAL HOBBY SHOP DIRECTORY

### TELL YOUR HOBBY RETAILER YOU SAW HIS AD IN FSM

Local Hobby Shop Directory listings are available for the next twelve issues for \$120 (payable in advance) or for the next six issues for \$66 (payable in advance), or at \$11 per issue (billed to established accounts for a minimum of six insertions). Ads will be set in standard listing typography. All insertions must be consecutive and may be charged if you have credit established with us. No mention of mail order business or area code permitted.

**CLOSING DATE:** Jan/Feb issue closes October 15, Mar/Apr issue closes December 15, May/Jun issue closes February 15, Jul/Aug issue closes April 15, Sep/Oct issue closes June 15, and Nov/Dec issue closes August 15.

#### ARIZONA — Glendale

Specialized for the detail modeler.  
Complete reference library.  
Headquarters for ship models & parts.

##### VAL'S HOBBY HANGAR

5858 W. Camelback Rd. 934-6174

#### ARIZONA — Phoenix

The hobby shop for the scratch model builder, including plastic kits, landscaping materials, basswood, balsawood, hardwoods and HO & N scale trains.

##### SCALE MODEL SUPPLIES

2416 E. Thomas Rd. 956-1279

#### CALIFORNIA — Anaheim

Everything for the model ship builder; RC boats, cars, planes, military, science, tools, books & rocketry. AT HOBBY CITY. Open Mon-Fri 10-8. Sat & Sun 10-6.

##### CENTURY MODELS

1238 Beach Blvd. 821-8320

#### CALIFORNIA — El Cajon

Plastic aircraft, armor, ships, cars, and sci-fi kits. Also 1/43 die-cast cars. Open Mon-Fri 11-6. Sat 10:30-5. Sun 12-4.

##### MILITARY EMPORIUM

700 N. Johnson #N 447-6662

#### CALIFORNIA — El Segundo

One of the finest in historical models and miniatures. Complete selection of plastic model kits, miniatures, in all scales, accessories, books and much more. Open 7 days.

##### THE MODEL SHOPPE

321 1/2 Richmond St. 322-5001

#### CALIFORNIA — Garden Grove

Military kits, aircraft from around the world. Plastic armor, aircraft, wargames, books, paints, tools. Open Mon-Thur 12-8 p.m. Fri 12-8:30. Sat 10:30-7. Sun 12-5.

##### BROOKHURST HOBBIES

12741 Brookhurst Way 636-3580

#### CALIFORNIA — Lakewood

Importers of scale models, accessories, supplies, books & magazines from around the world plus all domestic lines.

##### THE MILITARY SHOP

Lakewood Center Mall No. 128 630-5556

#### CALIFORNIA — Los Angeles

Trains, all makes & sizes, new & used. Scenery, figures, structure kits, tools, paints, scratchbuilding supplies, books. We buy old trains & toys. Closed Sunday

##### ALLIED MODEL TRAINS

10938 W. Pico Blvd. 475-0463

#### CALIFORNIA — Los Angeles

We stock Revell, Monogram, AMT, Tamiya, Testor, Hasegawa & more. Tools & supplies. Also R/C planes, cars, boats, HO & N trains. Open Monday-Saturday 10:15-6 p.m.

##### NATICK STORE

209 W. 4th St. (Downtown) 626-3339

#### CALIFORNIA — Los Angeles

Plastic kits, military & fantasy miniatures. Plus paints, tools and accessories. Open Mon-Thur 9-5. Fri & Sat 9-7. Sun 11-5.

##### OUR STORE

5011 York Blvd. 256-3577

#### CALIFORNIA — Orange

Complete stock of styrene, paints, supplies & kits for modelers. One of Southern California's most complete stocks of model railroad supplies from #1 ga. to Z ga. Open 7 days.

##### FRANK'S HOBBY SHOP

6667-668 N. Tustin Ave. 639-9901

#### CALIFORNIA — Ontario

We carry the tools, wood, plastic, and kits to complement any hobby field. Mon-Fri 10 a.m.-7 p.m., Sat 10 a.m.-6 p.m.

##### JACK'S HOBBY CRAFTS

2509 So. Euclid 984-8700

#### CALIFORNIA — Sacramento

Huge selection of foreign and domestic plastic kits. Aircraft, armor, cars, Sci-Fi & ships. Books, paints and supplies. Open 7 days a week.

##### RIVERSIDE HOBBIES

5770 Freeport Blvd. Suite 16 392-9739

#### CALIFORNIA — Upland

One of the largest selections of kits, reference material, and accessories in the southwest.

##### J&M HOBBIES

1655 N. Mountain 985-9212

#### CALIFORNIA — Walnut Creek

Military kits, books, games, and figures. Open 11 a.m. to 5:30 p.m. daily.

##### CENTURION MILITARY HOBBIES

3087 N. Main St. 937-2623

#### CALIFORNIA — Westminster

New in Orange County! Full line of model aircraft, armor, ships, cars, space figures, books, paints, decals, art. Open 7 days. Owner member I.P.M.S. USA.

##### ACCU-SCALE MODELS & HOBBIES

6454 Westminster Ave. 898-9591

#### COLORADO — Grand Junction

Western Colorado's complete hobby center.

Mon-Fri 10 a.m.-6 p.m., Sat 9:30-5:30.

##### THE HOBBY HUT

1125-27 North Ave. 242-8761

#### CONNECTICUT — Bridgeport

Most major and obscure brands. Trains, military, autos, boats, ships, RC cars. Collector kits

##### FINE SCALE HOBBIES

3488 Fairfield Ave. 366-0116

#### CONNECTICUT — Cos Cob

Trains, planes, armor, doll houses and miniatures. All hobby accessories.

##### HOBBY HOUSE

405 E. Putnam Ave. 869-0969

#### CONNECTICUT — Enfield

Old kits & latest releases. One of the largest selections of military and aircraft on East Coast. Near Bradley Air Museum. Open 7 days a week.

##### CRAFTED HOBBIES

128 South Road 749-0614

#### CONNECTICUT — Manchester

Complete plastics, cars, planes, trucks, ships. Military, diorama supplies, decals.

##### THE TRAIN EXCHANGE

71 Hilliard St. 646-0610

#### CONNECTICUT — Milford

#1 in specializing in hard-to-find models, domestic and foreign.

##### HOBBY HAVEN

395 Boston Post Rd. 874-4434

#### CONNECTICUT — Stamford

Complete line of plastic kits, aircraft, ships, military models, all paints and supplies. Friendly service. Open daily 10-5:30.

##### HOBBYCRAFTS, INC.

Crescent St. 323-1736

#### FLORIDA — Ft. Lauderdale

Full service shop for - beginners to craftsman - kits to finished models. Domestic & import lines. Large selection of kits & supplies for all scales. Complete tool & finishing department.

##### WARRICK CUSTOM HOBBIES

3250 Davie Blvd. 791-1156

#### FLORIDA — Ft. Myers

Z, N, HO, O scale trains & accessories. Planes, cars, boats, rockets, games, R/C, plastics, supplies. New & used. Open daily. Special orders welcome.

##### CARL WILSON'S CLEAR TRACK LTD.

3506 Palm Beach Blvd. 332-0165

#### FLORIDA — Orlando

Excellent selection of plastic model kits, paints and accessories. Open Mon - Sat 10-6. Fri evenings until 8. Closed Sunday.

##### BOB'S HOBBY CENTER, INC.

7333 Lake Underhill Rd. 277-1248

#### FLORIDA — West Palm Beach

Fine tools. Supplies. Special orders.

Mon-Fri 9:30-6. Sat 9:30-3. Closed Sunday.

##### CRAFT HOUSE HOBBY SHOP

1079 N. Military Trail 683-0764

#### GEORGIA — Smyrna

HO & N scale for your railroading enjoyment. Complete line of plastic models and paints. Open daily 10-7. Sat. to 5. Closed Sunday.

##### HOBBY JUNCTION

3260 S. Cobb Drive 432-2538

#### ILLINOIS — Chicago

Complete stock domestic/imported N, HO, O kits and ready-to-run trains and supplies. Lionel, LGB, Unimat; crafts, boats, airplanes, live steam, collector's items.

##### TROST HOBBY SHOP

3111 W. 63rd St. 927-1400

#### ILLINOIS — Des Plaines

A complete model shop. Plastic kits, paints, decals, diorama materials, books, detail parts. Close to O'Hare. Open 7 days a week. M, Th, F 10-9. Tu, W 10-6. Sat 10-5. Sun 11-3.

##### DES PLAINES HOBBIES

713 Center St. 297-2118

#### ILLINOIS — South Holland

One of Chicago area's largest selections of plastic kits. 200 military, 500 cars, 400 planes, 100 ships, 50 trucks.

##### SCALE MODELS

1048 E. 162nd 339-3922

#### IOWA — Des Moines

One of the Midwest's best selections of plastic models (injected & vacuumformed), paints, decals, books, tools & supplies.

##### IOWA SERVICE HOBBY

2706 Beaver Ave. 279-1173

#### KANSAS — Overland Park

One of the Midwest's finest selections military models, miniatures, books, modeling supplies, war and fantasy games.

##### THE KING'S CROWN

6860 W. 105th St. 341-6619

#### KANSAS — Wichita

Plastic kits galore. Over 3,000 new and golden oldies. Scratchbuilding materials and hobby supplies. Also large R/C dept., trains, miniatures and rockets.

##### THE HOBBY SHOP

2014 S. Oliver 682-9021

#### KENTUCKY — Hopkinsville

A full line model shop with an extensive selection of plastic kits & diorama, miniature, and gaming supplies. We cater to the serious hobbyist.

##### THE HOBBY SHOP

Pennyrile Mall 886-5747

#### MASSACHUSETTS — Lowell

We specialize in plastic model kits and supplies from around the world. Special orders don't upset us! Hours Wed thru Fri 6-9pm. Sat 10am-6pm.

##### International Models Hobby Shop

277 Chelmsford St. 459-4154



**MASSACHUSETTS — Worcester**  
"The Home of Hobbies since 1946."  
Plastic airplanes, ships, autos, paints, tools, & supplies. Complete line armor. MC & VISA.  
Daily 9:30-5:30. Wed 'til 8 pm.

**HENRY'S HOBBY HOUSE, Inc.**  
34 Franklin St. 754-5604

**MICHIGAN — Ann Arbor**  
Kits Galore-Airbrushes & Accessories.  
Special orders for those hard-to-find items.  
Mon-Fri 11 to 9, Sat 9:30 to 5:30.

**RIDER'S HOBBY**  
115 W. Liberty St. 668-8950

**MICHIGAN — Marquette**  
Plastic and wood models.  
Planes-cars-trucks-ships  
decals-glues-paints-tools.

**HOBBY WORLD**  
124 S. Front St. 228-4098

**MICHIGAN — Westland**  
Scale model trains, cars, planes, ships, armor and accessories. Scratch builders supplies, paints, airbrushes & brushes, books, games & magazines. Mon-Fri 10-6. Fri til 7. Sat 10-5.

**DAVE'S HOBBY & TV**  
29026 Warren Road 422-4464

**MISSISSIPPI — Jackson**  
One of the South's finest selections of basic and hard to get imports.  
Books, tools, airbrushes, styrene & games.  
Open Mon. through Fri. 10-6. Sat. 10-5.

**CREATIVE CRAFTS & HOBBIES**  
Maywood Mart 982-2661

**MISSOURI — Kansas City**  
1000's of military & fantasy miniatures.  
100's of fantasy & military games.  
Models, MicroScale, books, accessories.

**YANKEE DOODLE GAME & HOBBY**  
6831 Longview Rd. 761-1113

**MISSOURI — St. Louis**  
Everything in hobbies.  
MasterCard, Visa, and checks welcome.  
Two convenient locations.

**ASTRO HOBBY HOUSE COMPANY**  
1245 S. Laclede Station Rd. 961-7093

**NEBRASKA — Bellevue**  
Just outside the Strategic Air Command  
Museum means plastic models are our  
specialty. Worth a visit.

**AIR-CRAFT HOBBIES**  
706 W. Mission 291-6630

**NEVADA — Reno**  
Planes, trains, boats, cars, crafts,  
games, books, tools, and supplies.  
Open daily 10-6. Fri 10-9. Closed Sunday.

**HIGH SIERRA MODELS**  
953 W. Moana Lane 825-9098

**NEW JERSEY — Cranford**  
One of the best little hobby shops in Jersey.  
Plastic kits, wooden ships, HO & N trains.  
Paints, books, fabulous displays.

**DICK'S HOBBYLAND**  
16 North Union Ave. 272-7660

**NEW JERSEY — Old Bridge**  
Role playing games, books, magazines,  
hobby kits from around the world.  
Military and fantasy miniatures.  
HO trains and paints.

**ADVENTURE HOBBIES**  
596 Englishtown Rd., near Rt 18 251-2030

**NEW JERSEY — Pennsauken**  
The latest in plastic military kits, books,  
magazines, paints and decals. We have  
automobile and ship kits.

**TED'S ENGINE HOUSE**  
6307 Westfield 662-0222

**NEW JERSEY — Red Bank**  
One of New Jersey's most complete hobby  
centers. Open Mon-Wed 10-6. Thur & Fri 10-8.  
Sat 10-5. Sun 12-4.

**HOBBYMASTERS**  
62 White Street 842-6020

**NEW YORK — Bay Shore**  
Complete selection of models;  
military, airplanes, cars.  
Building supplies, paints, and tools.

**SOUTH SHORE HOBBIES**  
577 E. Main St. 665-7707

**NEW YORK — Brooklyn**  
Complete line of military kits, both domestic  
and imported. Paint and accessories.  
Mon, Thur, Fri 10:30 a.m.-8:00 p.m.,  
Tue, Wed, Sat 10:30 a.m.-6:00 p.m.

**WALT'S HOBBY SHOP, Inc.**  
7909 5th Ave. 745-4991

**NEW YORK — Hicksville**  
One of Long Island's fastest growing model  
shops. Military airplanes, cars, RR building  
supplies, paints, decals and tools. Open 7 days.  
Mon-Fri 10-9. Sat 10-6. Sun 10-4.

**RIGHT TRACK HOBBIES**  
79 Broadway 433-0123

**NEW YORK — Huntington**  
In an independent review of hobby shops,  
Newsday described the Caboose: "An absolute  
dream. Jampacked with goodies."  
Daily 9:30-6. Fri. to 8. Sun. by appointment.

**THE CABOOSE, INC.**  
208 Wall Street 427-8288

**NEW YORK — Kingston**  
Full service hobby shop. Balsa, Plastruct,  
miniature lumber and building supplies.  
Open Mon-Thur 10-6. Fri 10-9. Sat 10-5.  
Closed Sunday.

**J AND J'S HOBBIES, INC.**  
785 Broadway 338-7174

**NEW YORK — Middletown**  
Model maker & craftsman supplies & tools.  
Structural shapes in brass, alum., plastic,  
halsa & bass wood. Paint. decals, books.  
Hours Mon-Sat 10-5. Thur & Fri 7pm.

**AREA MODEL TRAINS, INC.**  
15 West Main St. 343-4988

**NEW YORK — NY (Chinatown)**  
Complete series of military, aircraft, automob-  
iles, motorcycles, RC, rockets, battleships,  
tanks. Foreign import models plus paints, air-  
brushes, tools & accessories. Open 7 days 10-8.

**DIORAMA MODEL SHOP**  
37 Catherine St. 619-5785

**NEW YORK — NEW YORK**  
Plastic and wooden kits, rockets. We specialize  
in static and remote control ship models.  
Open Mon-Sat 9-7. Sun 11-5.  
Closed Sundays June, July & August.

**JAN'S HOBBY SHOP**  
1431A York Ave. 861-5075

**NEW YORK — Plattsburgh**  
HO and N scale trains and accessories.  
R/C planes, boats, plastic, military, etc.  
Open 10-6 daily. Friday until 8.  
Closed Sunday.

**PLATTSBURGH HOBBIES**  
22 Oak Street 561-0374

**LIST YOUR SHOP HERE**  
**ATTRACT NEW CUSTOMERS**  
**MAKE MORE SALES**

**NEW YORK — Utica**  
Imported & domestic plastic models.  
HO & N scale trains. Rockets, air brushes,  
books, scratchbuilding supplies.

**DISCOUNT HOBBY CENTER**  
405 James St. 733-3741

**NEW YORK — Yonkers**  
Plastic military model kits, scratchbuilding  
& diorama supplies, metal figures, airbrushes,  
decals, how-to books, HO trains, D&D figures.  
Mon. 3-8, Tues.-Fri. 10-8, Sat. 10-6, Sun. 1-5.

**ED'S HOBBY SHOP**  
847 McLean Ave. 237-1649

**OHIO — Canton**  
Trains, N, HO, O-27, LGB,  
New and used. Games & tools.  
One of the best plastic selections  
in the area.

**FALCON HOBBIES**  
1410 Whipple Ave. NW 477-9904

**OHIO — Cleveland**  
Airplanes, boats, RC, rockets, plastic kits,  
trains, books, tools, wargames.  
Mon-Fri 10-8:30. Tue-Wed-Thur-Sat 10-5.

**NATIONAL HOBBY, INC.**  
5238 Ridge Road 749-2450

**OHIO — Cleveland (Lakewood)**  
Large selection of aviation and military  
books and magazines, general hobbies.  
Open 7 days.

**WINGS HOBBY SHOP**  
17112 Detroit Ave. 221-5383

**OHIO — Columbus**  
All scales of imported and domestic aircraft,  
armor and miniatures. Decals, books, paints.  
12-9 daily, 12-5 Sunday

**STRETE HOBBIES**  
3655 Sullivan Ave. 279-6959

**OHIO — Mansfield**  
Plastic military model kits, military medals,  
books, coins, military miniatures,  
D & D, wargames and hobby supplies.  
Mon-Fri 11 a.m.-6 p.m. Sat 12-6 p.m.

**THE PANZER HUT**  
1345 Park Ave., W. 529-4339

**OHIO — North Canton**  
Great selection of domestic & imported kits,  
how-to books, airbrushes, tools, paint, wood &  
glue. HO & N trains, rockets, games, R/C spe-  
cialists. Hobby consultants. Special orders.

**MODELER'S HAVEN**  
4255 Portage N.W. 499-6000

**OHIO — Oak Harbor**  
Plastic & wood kits, scratchbuilding  
and diorama supplies.  
Tools and accessories.  
Personalized and friendly service.

**OAK HARBOR HOBBIES**  
136 W. Water St. 898-1300

**PENNSYLVANIA — Allentown**  
Collector's corner; military figures, the latest  
in armor & aircraft kits. War gaming,  
fantasy. Complete line of paints.

**ROSEMONT HOBBY SHOP**  
Trexler Mall 398-0210

**PENNSYLVANIA — Erie**  
Plastic kits, books, games, railroads. Metal fig-  
ures, military & fantasy. Cockpit details,  
scratchbuilding & diorama materials & de-  
tails. Open Mon-Fri 11-8. Sat 9-5.

**PENN STATION MODEL SHOP**  
3435 West Lake Rd. 833-5423

**PENNSYLVANIA — West Chester**  
Large selection of plastic kits,  
Waldron, Humbrol, Microscale.  
Full line of diorama materials,  
collector kits, tools and books.

**BRANDY WINE HOBBIES**  
1502 West Chester Pike 696-9049

**RHODE ISLAND — Pawtucket**  
All types of model kits, domestic & imported,  
old & new, for all interests; plus books,  
paints, magazines, tools and supplies.  
Open Mon-Fri 4 p.m.-8 p.m. Sat 10 a.m.-6 p.m.

**PARENT HOBBIES**  
270 West Ave. 722-2398

**RHODE ISLAND — Warwick**  
Plastic military kits, Tamiya paints,  
war games, model railroad HO, O, N scales  
Open Monday, Wednesday & Saturday 10-6.  
Tuesday, Thursday & Friday 10-8.

**J & R TRAINS & HOBBIES INC.**  
830 Post Road 461-1371

**SOUTH CAROLINA — Charleston**  
Variety of plastic, wood & die cast kits.  
War games, books, paints and tools.  
Open 8:30-6 daily.

**CHARLESTON HOBBIES**  
1011 St. Andrews Blvd. 763-1429

**SOUTH CAROLINA — Columbia**  
One of the Southeast's most complete hobby  
shops. Plastic kits, ships, wargames, model  
railroading, tools, rockets, books and much  
more. Daily 10-6. Fri 10-8.

**THE DUTCH DOOR HOBBY SHOP**  
1625 1/2 Broad River Road 798-3773

**TENNESSEE — Chattanooga**  
Hobby supplies for the craftsman in modeling  
autos, trucks, planes, armor, figures. Come  
see our customers' award winning displays.  
Open Mon.-Sat. 10 a.m.-9 p.m., Sun. 1-5 p.m.

**CHATTANOOGA HOBBY CENTER**  
5425 Highway 153 North 875-8231

**TEXAS — Abilene**  
For just about the best scale modeling and  
models. Monthly meetings.  
Open 9-5:30 Monday through Saturday.

**MAKER'S HOBBIES**  
715 Grape Street 673-3291

**TEXAS — Arlington-D/FW Metroplex**  
Kits-tools-details-wood-plastic  
Books-scenics-paints-R/C-D/D  
HO, N railroad layouts  
Mon-Fri 10-8, Sat 10-6. We are modelers.

**THE HOBBY HUB**  
903A Pioneer Pkwy W. 265-8101

**TEXAS — Austin**  
Our specialty is scale modeling.  
Wide selection of domestic and foreign kits,  
paints, tools, books and supplies.

**KING'S HOBBY SHOP**  
8810 Lamar 836-7388

**TEXAS — Denton**  
Large selection of airliner kits & decals.  
Vacuumform and plastic models.  
Scale R/C kits and supplies.  
Monthly specials.

**AIRPLANES, ETC.**  
718D Hercules 382-0950

**TEXAS — El Paso**  
Largest selection of aircraft and military  
models in west Texas. Also: Paints, books,  
Microscale decals and finishing products for  
modeling. Expert advice. 10 to 6:30 Mon.-Sat.

**HAL'S HOBBY SHOP, INC.**  
No. 57 Sunrise Ctr. 755-1914

**TEXAS — Irving (Dallas Area)**  
Aviation books, profiles, magazines,  
imported plastic kits, HO, N scale trains,  
FAOW, R/C, U/C planes and cars.  
Mon 1-7. Tue-Sat 9:30-7.

**M-A-L HOBBY SHOP**  
108 S. Lee St. 438-9233

**TEXAS — Plainview**  
One of the finest selections of plastic kits in the  
Panhandle and South Plains. Aircraft, ships,  
military models, cars & trucks, paints &  
supplies. Open Mon-Fri 3-7. Sat 10-6.

**1st CAV. MODEL HOBBY SHOP**  
913 Columbia 293-9707

**UTAH — Roy**  
Complete lines of plastics, books, wargames  
and figures, accessories and paints with  
expert advice to aid you.  
Special ordering is our business.

**MATT'S MODELS**  
5649 S. 1900 W. 825-1400

**VIRGINIA — Virginia Beach**  
A full service hobby shop  
Open 10-8, 10-6 Wed. & Sat.

**LANDING STRIP HOBBIES**  
1043-45 Providence Sq. 467-2936

**VIRGINIA — Virginia Beach**  
Specializing in Lionel, HO, N trains and  
accessories. Repair service available.  
Complete hobby & craft store. Daily 10-8.

**PEMBROKE STATION**  
4576-8 Pembroke Mall 490-2912

**WASHINGTON — Bellevue**  
One of Seattle's finest shops for the  
fine scale modeler. Open Mon-Tue 10-8.  
Fri & Sat 10-midnight. Sun noon-5.

**THE TRIPLE ALLIANCE**  
10328 Main Street 453-8939

**WASHINGTON — Bremerton**  
Old kit corner; dioramas specialist.  
Armor, aircraft, ships, figures  
and modeling supplies.

**THE EAGLE SHOP**  
107 Washington Ave. 479-4113

**WASHINGTON — Seattle**  
Scale model ships, trains, planes, tanks,  
military & wargaming miniatures, books,  
tools, decals, etc. Mon, Wed, Fri 12:30-6:00;  
Tue, Thur 12:30-8:00; Sat 10:00-6:00.

**American Eagles Inc. Military Hobbies**  
8556-58 Greenwood N. 782-8448

**WEST VIRGINIA — Nitro**  
The special shop for special people. All brands of  
plastic kits, all scales. A full line of parts for the  
perfectionist. Complete hobby & craft center.  
Open Mon-Fri 10-5:30. Sat 10-5.

**NITRO HOBBY & CRAFT CENTER**  
21st Street 755-4304

**WISCONSIN — Green Bay**  
Tools, paints and adhesives designed for the  
modeler. Kits covering all scales and types.  
Hard to find and special imports. Open Mon-  
Thur 10-5:30. Fri 10-8. Sat 10-4:30.

**RIVER CITY HOBBIES**  
500 E. Walnut 432-5835

**WISCONSIN — Madison**  
One of the Midwest's most complete hobby  
shops. Tools, plastic kits, wargames, model rail-  
roading, miniatures. Hours: 9-9 Mon & Fri, 9-6  
Tue, Wed, Thur, 9-5:30 Sat, 12-5 Sun.

**MIDVALE HOBBY SHOP**  
505 S. Midvale Blvd. 238-2233

**AUSTRALIA — North. Territory, Darwin**  
Large range of plastic model kits  
Roodeals, R/C aircraft, boats & cars.  
Model railroad supplies, games.

**Darwin Hobby Shop Centre, Pty., Ltd.**  
Shop 10, Hibiscus Centre, Village 818404

**CANADA — Fredericton, N. B.**  
The modelers store. Specializing in trains,  
armor, planes, war & fantasy games.  
Only quality lines stocked.  
Open Tue-Wed 9-5. Thur-Fri 9-9. Sat 9-5.

**THE RAILHEAD**  
384 Queen Street 454-1909

**CANADA — Kingston, Ontario**  
Serving the model builder since 1951.  
Always an outstanding variety of plastic kits  
R/C, railroad, figures, games, tools and  
books. Daily 9-5:30. Fri 9-9. Closed Monday

**LLOYD SHALES HOBBY SUPPLIES**  
208 Division St. 548-8427

**CANADA — Vanier, (Ottawa), Ontario**  
One of Canada's leading model shops.  
Complete line of military & aircraft kits,  
decals, paints and accessories.

**HOBBY HOUSE, LTD.**  
89 Montreal Rd. 748-7814

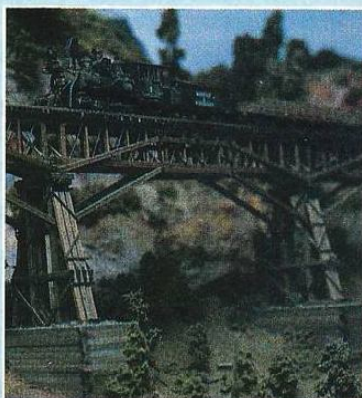
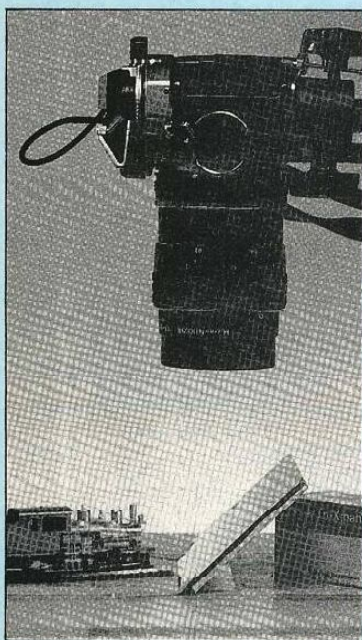
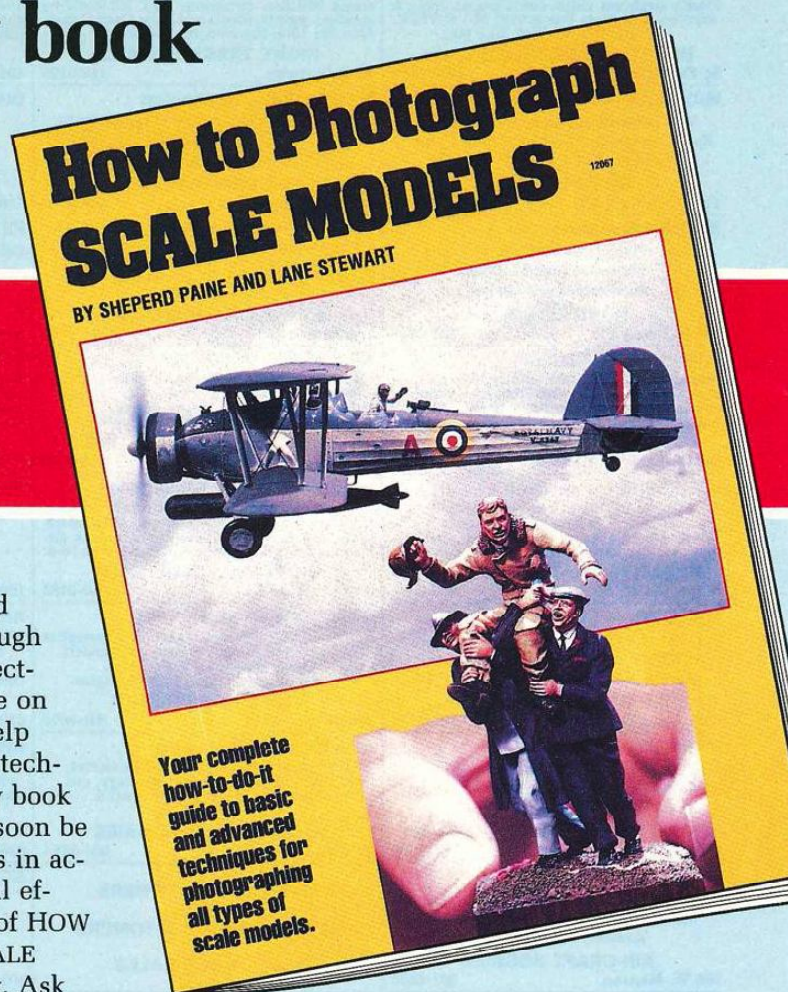


# An important new book for all modelers – FOR YOU!

## HOW TO PHOTOGRAPH SCALE MODELS

If you've ever wanted to photograph your favorite models, but didn't know what equipment you'd need or what techniques to use, this book is for you! **HOW TO PHOTOGRAPH SCALE MODELS**, by Sheperd Paine and Lane Stewart, will be your complete how-to guide to photographing all types of models. Whether you're interested in photographing single subjects (such as a model ship, airplane, or auto), complete model railroads, figures, dollhouses, boxed dioramas, or a variety of other types of models, this book

will show you how. In 64 pages, Paine and Stewart take you through the basics – from selecting a camera to advice on composition – then help you master advanced techniques. With this new book as your guide, you'll soon be photographing models in action, and using special effects! Buy your copy of **HOW TO PHOTOGRAPH SCALE MODELS**, \$8.95, today. Ask for a copy at your hobby shop, or use the coupon below to order direct!



- **Getting started**
- **Taking your first model pictures**
- **Adding to your bag of tricks**
- **Moving indoors: model photography with artificial light**
- **Special setups for single models**
- **Photographing model railroad layouts**
- **Photographing miniature rooms, dollhouses, and boxed dioramas**
- **Photographing models in action**
- **Tabletop techniques and special effects**
- **Professional equipment and techniques**

DEPT. 38692

**KALMBACH BOOKS.**

1027 N. Seventh Street, Milwaukee, WI 53233

Enclosed is \$\_\_\_\_\_ for \_\_\_\_\_ copies of **HOW TO PHOTOGRAPH SCALE MODELS** at \$8.95. Include for postage and handling: U.S. \$1; foreign \$1.50. Wisconsin residents add 5 per cent sales tax.

Name \_\_\_\_\_

Street \_\_\_\_\_

City, State, Zip \_\_\_\_\_

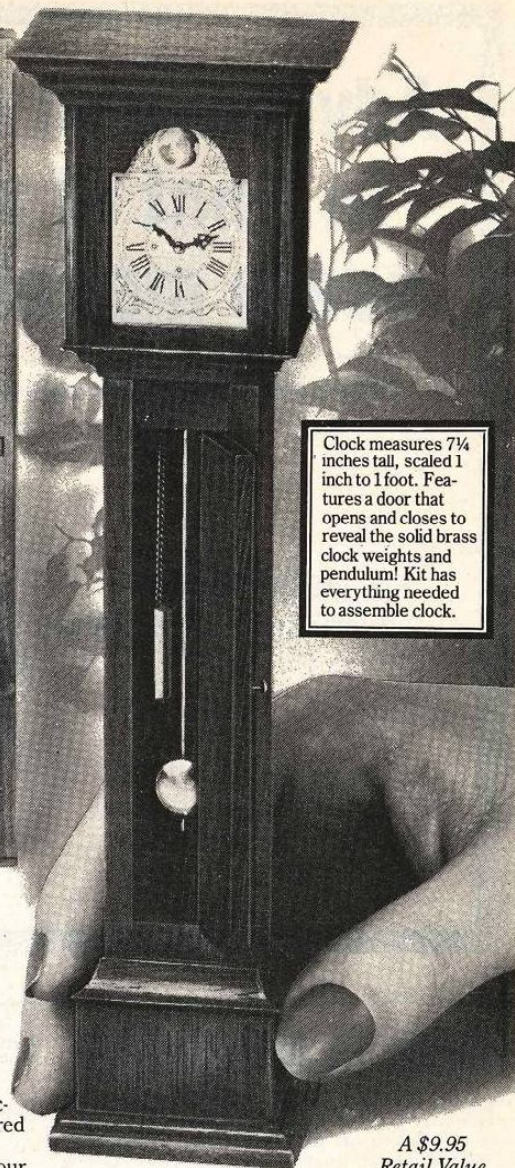
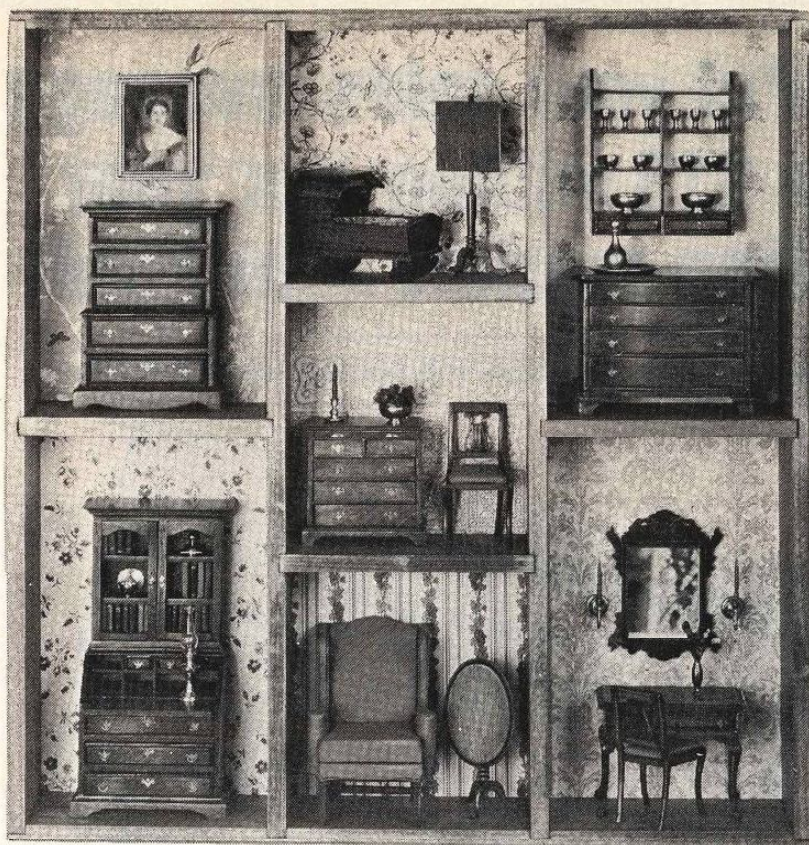
Charge to: ☐ **MASTERCARD** ☐ **VISA** Exp. Date \_\_\_\_\_

Card Number \_\_\_\_\_

Signature \_\_\_\_\_

If you don't wish to clip your magazine, copy the necessary information including department number on a separate sheet. Price subject to change. © 1984 Kalmbach Publishing Co.





Clock measures 7¼ inches tall, scaled 1 inch to 1 foot. Features a door that opens and closes to reveal the solid brass clock weights and pendulum! Kit has everything needed to assemble clock.

A \$9.95  
Retail Value

## The House of Miniatures invites you to build... A collection of authentic true-to-scale antique furniture

Experience the personal satisfaction of creating antique *miniature* reproductions with your very own hands. Imagine the thrill of displaying classic Chippendale in your home. Showing off a Hepplewhite dining set or a Queen Anne table. These are among the world's most treasured antiques. Now you can enjoy the timeless beauty and charm of these furniture masterpieces *in miniature*—with our extraordinary museum quality kits.

Each House of Miniatures kit is precision-scaled to 1/12 of the full-size original and cut to exact specifications. Only furniture-quality hardwood is used, and fittings and hardware are of solid brass—finished to fit perfectly.

Kits include detailed step-by-step instructions. No special tools or skills are required for assembly.

Begin your collecting adventure with our miniature reproduction of the William & Mary clock kit for only \$1 when you become a trial member of The House of Miniatures Collectors Society.

As a trial member, you will have the opportunity to purchase, *if you wish*, other museum quality miniature kits. However, you are not obligated to buy any additional kits—ever!

Remember, this William & Mary clock kit is available for \$1 by mail only. *With no further obligation on your part.* Mail coupon today!

Take this  
museum quality  
**William & Mary**  
Clock Kit for only \$1\*  
*with no further obligation*

© 1985 Craftmark Inc.

### Each kit has fine details

- *Elegant molding*
- *Solid brass hardware with key plates*
- *Drawers that open and close*
- *Cabriole legs*



Chippendale lowboy

• *Finials*

### THE HOUSE OF MINIATURES

Division of Craftmark Inc., 80 Newbridge Road, Bergenfield, NJ 07621

Please enroll me as a trial member of the Society and send me the William & Mary clock kit. Bill me only \$1.\* If I am not completely satisfied, I may refuse delivery of the second shipment by writing "cancel me" on the shipping label. If I keep the second shipment, I will be a regular member and receive additional shipments every four weeks. Prices for each shipment, which will contain one or two kits, are \$9.95\* or less. I may return any shipment and I am not obligated to accept any minimum number.

BR17

Mr. ☐ Mrs. ☐  
Ms. ☐ Miss ☐

All enrollments are subject to acceptance.

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

\*Plus shipping, handling and sales tax.

### FREE BONUS

Professional Quality Finishing Samples  
Include tinted glue, oil base stain (for authentic color), glaze stain for antiquing and highlighting and other materials to professionally finish your kit to museum quality.



# Advertisers! Put your sales message in front of a \$13 million\* per year scale modeling market – in FSM!

More than 30,000 ready-to-buy scale modelers will see the ads in this issue!

For information on  
advertising, call or write:

\* Based on the FSM reader survey.

## FINESCALE MODELER

Fred Hamilton  
Advertising Sales Manager  
FINESCALE MODELER  
1027 N. 7th Street  
Milwaukee, WI 53233  
Call collect at: 414-272-2060

## INDEX TO ADVERTISERS

WE BELIEVE that our readers are as important as our advertisers; therefore, we try to handle all readers' complaints promptly and carefully. If, within a reasonable length of time, you do not receive your merchandise or a satisfactory reply from an advertiser, please write to us. In your letter please detail exactly what you ordered and the amount of money you sent. We will then forward your complaint to the advertiser for action. If no action is ultimately obtained, we will refuse to accept further advertising from him. Address complaints to: FineScale Modeler, 1027 N. Seventh St., Milwaukee, WI 53233.

<b>A</b>	
A P C Hobbies	16
A T P, Inc.	10
A & W Industries	8
Accu Scale	19
Aeolus Publishing Limited	72
Aero Publishers, Inc.	73
Aero Research	14
American/Gryphon	16
Armor in Detail	53
Arrow Hobbies	53
Auf der Fricko	73
Auto World	71
Aviation Photographics	19
<b>B</b>	
Badger Air Brush	55
Bare Metal Foil Co.	7
Bargains Galore	16
Battle Hobbies	4
Billing Boats	80
Binks Manufacturing Company	66
BlueJacket Shipcrafters	54
<b>C</b>	
Canadian Float Plane	8
Castolite	36d
Clover House	72
Combat Models	64
Combat Series	39
Creations Unlimited	65
Cush	68
<b>D</b>	
D & J Hobby & Craft	64
Des Plaines Hobbies	8

Discount Hobby Center	70
Dunbar Miniatures	64
<b>E</b>	
Empire-Pacific Ltd.	2
Evergreen Scale Models	15
<b>F</b>	
FineScale Modeler	19, 21, 56, 57, 75
Floquil-Polly S Corp.	37
Paul Freiler's Historical Models	15
A. J. Fricko Co.	20
<b>G</b>	
Grandt Line Products	64
Great Planes Models	68
Arthur S. Green	4
<b>H</b>	
Harold's Place	17
Heritage Ship Builders	17
Hobby Products Company	39
Hobbyland	54
Horizon	67
House of Miniatures	77
<b>I</b>	
IPMS/USA	39
I/R Miniatures	17
Imported Specialties	36
International Historic Films	71
Island Model Craft Supply	66
<b>K</b>	
Kalmbach – Books	20, 59, 76
Kalmbach – FineScale Modeler	5, 6, 19, 71, 78
Kit Collectors Clearing House	15
<b>L</b>	
Lencraft	27
Little Generals	27
<b>M</b>	
Mascot	65
Meta Models	4
Metalizer Products	54
Micro Mark	31
Brian K. Mitchell	19
Model Expo	11
Model Expo Publications	71
The Model Shoppe	4

<b>N</b>	
NF Video	6
Northeastern Scale Models	72
NorthWest Short Line	14
<b>O</b>	
The Old Guard, Inc.	37
Ora Electronics	9
<b>P</b>	
Plastic Military Models	73
The Plastic Place	73
Polk's Model Craft Hobbies	54
<b>R</b>	
R E H Distributing Co.	63
Repla-Tech International	73
The Rock Quarry	4
Riverside Hobbies	6
Rosemont Hobby Shop	14
<b>S</b>	
San Antonio Hobby Shop	55
Sherrill Studio	4
Sky Books International	6
Standard Bearer Miniatures	67
Strete Hobbies	76b
<b>T</b>	
Taubman Plan Service	71
Testors	79
Time-Life Books	13
<b>U</b>	
Unique Models	72
<b>V</b>	
Victoria Products	4
Vintage Castings	63
<b>W</b>	
War Eagle	9
War & Pieces	8
Warren Tool Co.	4
Warwinds International	63
White Eagle	68
Williams Brothers	53
WWI Aero	72
<b>X</b>	
X-Acto	27
<b>Z</b>	
Zega Model Center	7



# THE PERFECT FINISH

## It's easy too!

In the past, hobbyists attempting to create accurately finished automobiles were forced to use expensive, full-scale auto lacquers and bothersome surface prep procedures. (Lacquers tend to craze polystyrene, hence the need for careful priming.)

Model Master Professional Paints for Cars and Trucks solve both problems. Economical half-ounce bottles and 3.2 ounce spray cans provide the right amount of paint for most modeling projects. And because Model Master paints were developed for polystyrene application, no special preparation is required.

Model Master auto paints are unique because they are semi-transparent metallic pearlescents.

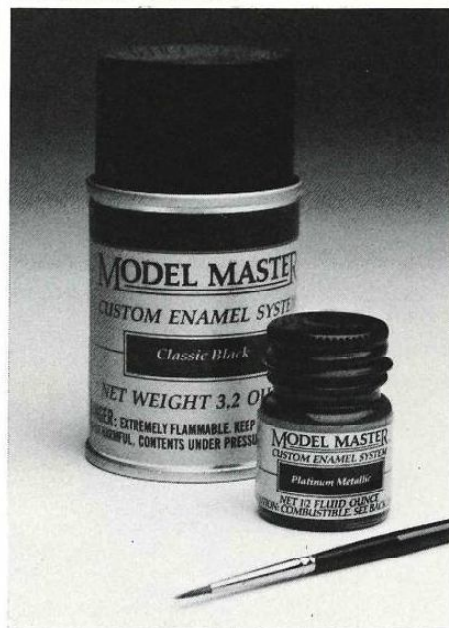
This formulation allows the builder to create deep, rich, lustrous finishes. Two or three color coats followed by a couple of high-gloss clear coats produce results that are no less than spectacular!

The colors were selected after Testor designers carefully scanned auto manufacturers color chip books from around the world, and located the most popular, up-to-date paint schemes. Engine enamels, primers, clear gloss, and detailing colors like Turn Signal Amber have been included also.

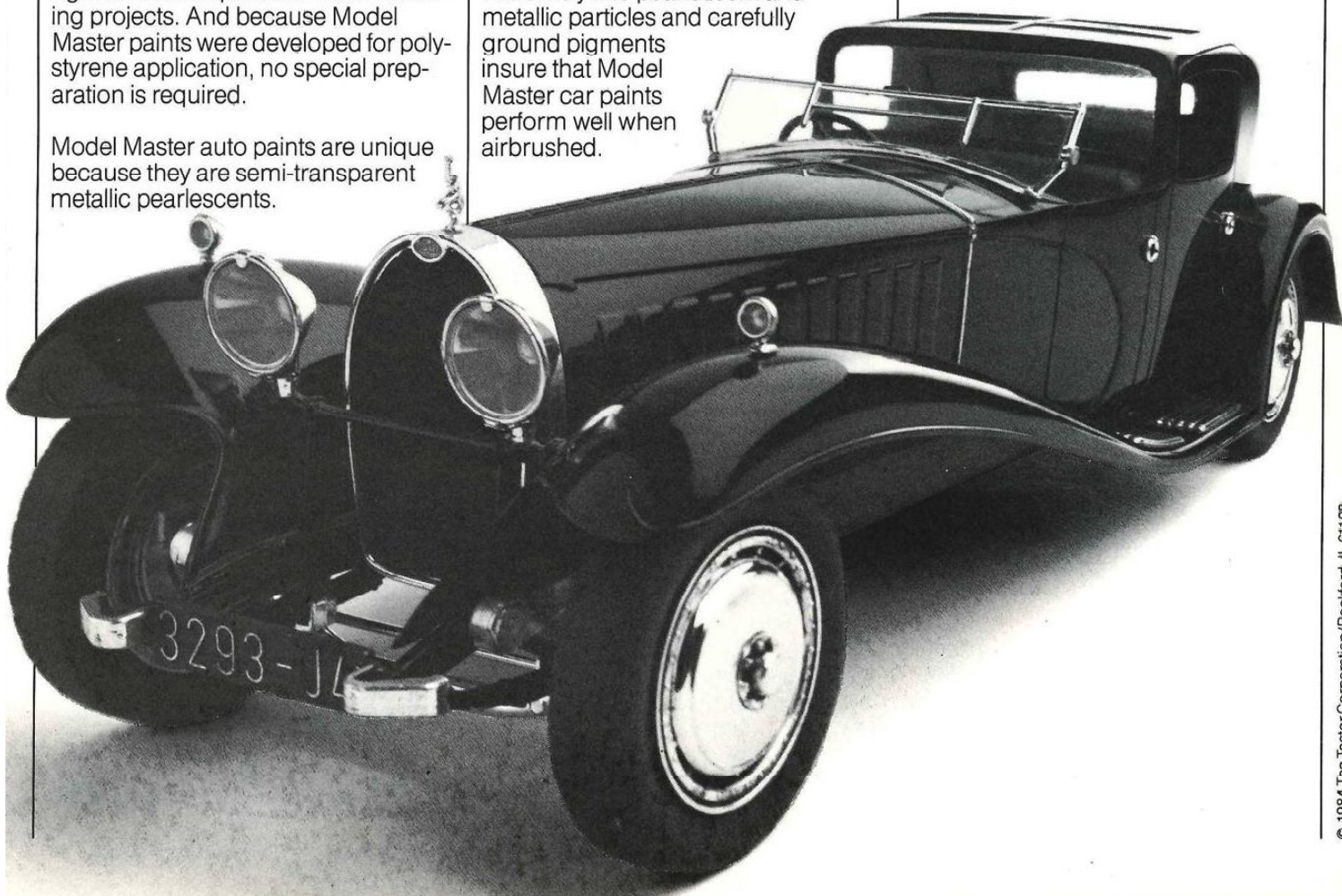
What's more, by experimenting with primers, the builder can develop custom finishes. For matching standard colors, Testor suggests two color coats over gray primer. By using gold or silver primer, for example, and varying the number of color applications, truly original finish work can be achieved.

Like other Testor and Model Master coatings, these new colors are recommended for airbrush application. Extremely fine pearlescent and metallic particles and carefully ground pigments insure that Model Master car paints perform well when airbrushed.

## Introducing Model Master Professional Paints for Model Cars and Trucks.



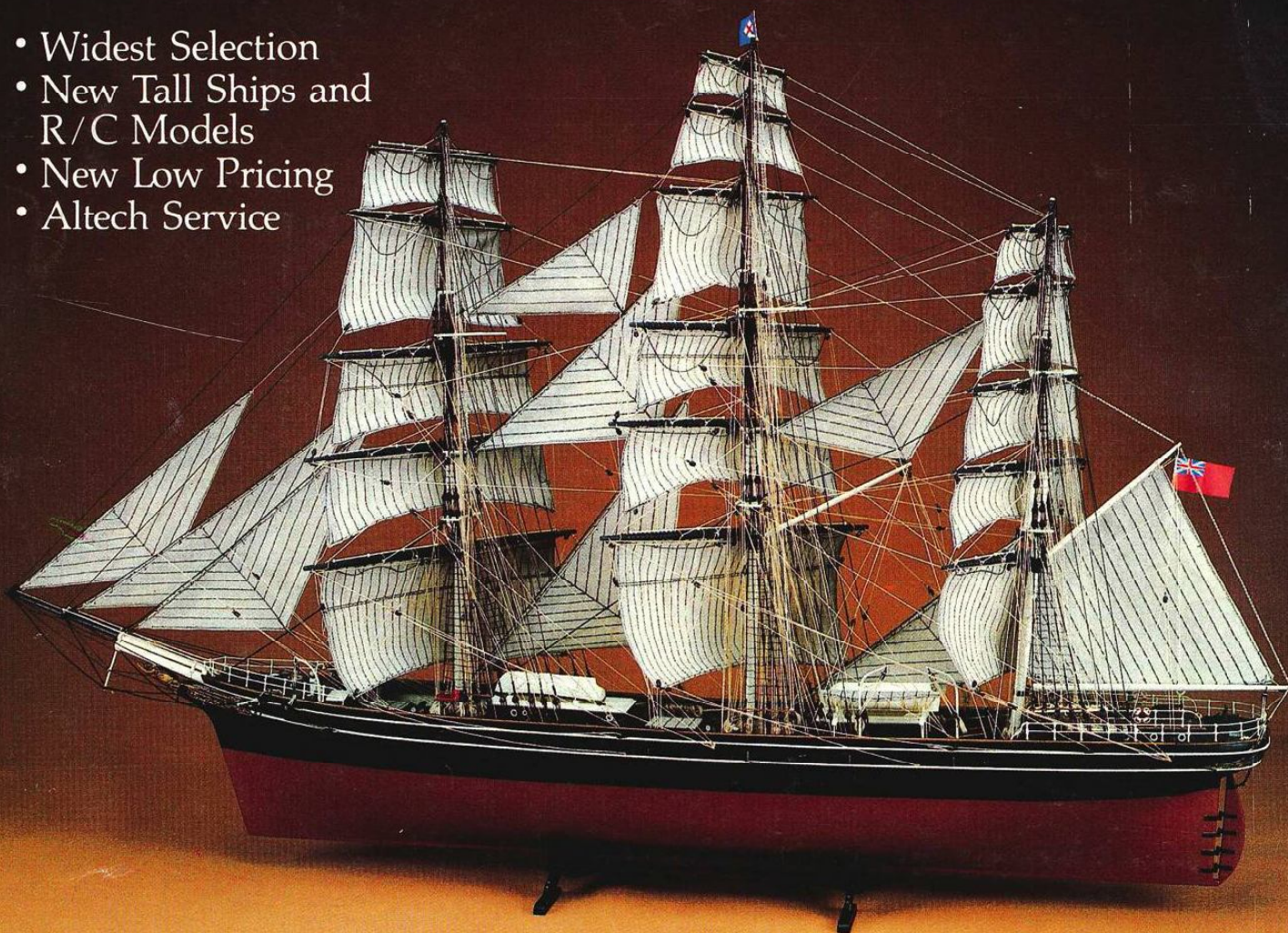
In addition, the Model Master finishing system includes precision tools. Natural fiber brushes from 000 to 1/2", sanding films, cementing tips, and No. 11 refill blades all reflect the high standards set by Model Master paints.





# *Now there are even more reasons to build* *boats*

- Widest Selection
- New Tall Ships and R/C Models
- New Low Pricing
- Altech Service



To anyone who has ever built a detailed model boat kit, the name Billing is boats. Billing is world renowned quality and craftsmanship. Billing is incredible detail. Now the old world, Danish craftsmen at Billing Boats have joined with Altech Marketing to add still more excitement to the world's most respected reproductions, including broader selection, new low pricing and complete inventory and service.

## **NEW SELECTION AND NEW PRICING**

Billing now lets you choose from a huge array of wood display models like the HMS Bounty and the Cutty Sark shown here; or exquisitely detailed R/C kits including Jacques Cousteau's Calypso; and even beginner plastic hulled models. No one offers more of a choice... or better value.

There are 40 in all, each a masterpiece. Every one begins with original blueprints,

or with detailed inspections of the salvaged prototype. Many of the kits are approved by and developed in close cooperation with museums and shipyards around the world.

## **A BILLING MODEL IS WORTH THE TIME**

A close look at the 1/75 scale Cutty Sark will tell you why there's no greater satisfaction than building a Billing Boat. The kit itself was developed from original drawings from the British Museum in London. The Cutty Sark, along with its fitting kit, is complete with cloth sails, rigging thread, chain, winches, pulleys, railings, wood planking, strips or dowels and more... most are in perfect scale.

This kit begins with high quality wood, the best you can buy. The optional fittings kit itself has about 1100 parts. Many are turned brass, because Billings knows realism can't be achieved with plastic. The

precision replication is heightened by the wooden decking and realistic sails.

When you're finished building this clipper ship, you'll own a display piece you can treasure for a lifetime. Also available in the tall ships, all wood series is the Santa Maria, the Bluenose, and the legendary HMS Bounty.

Whether you're into R/C or just building for display, you'll find there are now more ways and reasons than ever to build a magnificent Billing Boat. Ask your hobby dealer to show you the full catalog.

**Altech Marketing**  
 **billing boats**

P.O. Box 286, Fords, New Jersey 08863